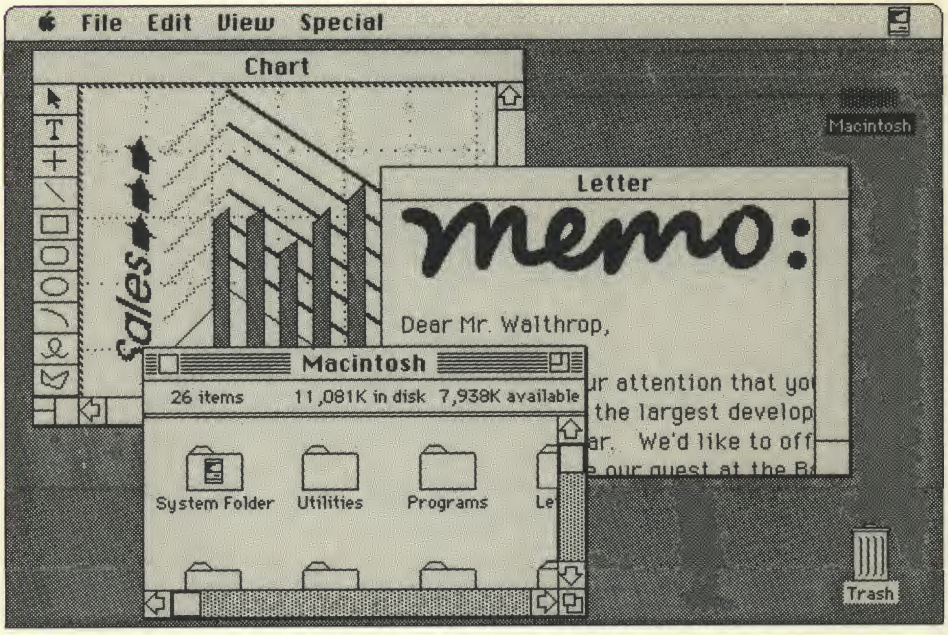
Macintosh® System Software User's Guide

Version 6.0



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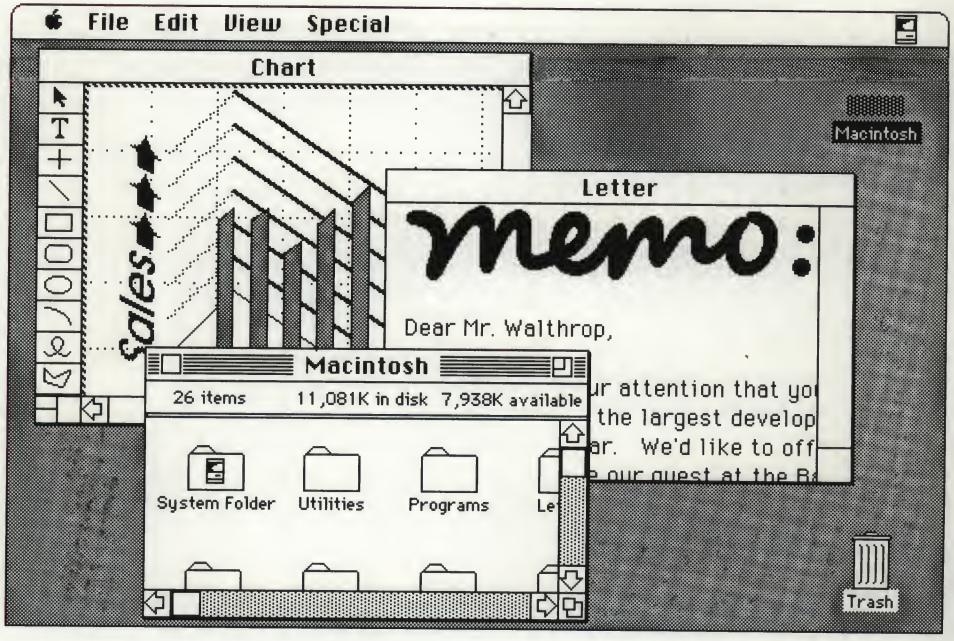
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Macintosh® System Software User's Guide

Version 6.0



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Contents

Preface xi

About this manual xii
Using the chapters in this manual xiii
About the other manuals xiv
Using the manuals xiv
For the beginner xiv
For the experienced user xv

1 Tutorial: Learning Macintosh Basics 1

Getting ready 2
Macintosh Plus 2
Macintosh SE 2
Macintosh II 2
Starting the tutorial 3
How to use this tutorial 5
What you'll learn 6
Mouse basics 6
Moving the pointer by moving the mouse 7
Selecting an icon by clicking 8
Dragging an icon 9
What you've learned about the mouse 10

Choosing commands from menus 11
Selecting what you want to work with 11
Looking at a menu 11
Choosing a command from a menu 13
What you've learned about choosing commands 13
Working with windows 14
Changing the size of a window 15
Zooming a window 16
Moving a window 17
Opening another icon to see another window 18
Overlapping windows 18
Making a window active 19
Opening other icons 20
Closing a window 22
Using the scroll bars to see more 24
What you've learned about working with windows 25
Using applications 26
Starting an application 26
Creating a document 28
Naming your work and saving it on a disk 29
Editing text 32
Saving a document with a different name 35
What you've learned about using applications 36
Organizing documents 37
Using folders 37
Nesting folders 40
Moving through the hierarchical file system within an application 43
Opening a document within an application 46
Saving a document in the hierarchical file system 47
Removing documents and folders 49
Starting your own work 50

2 Basic Macintosh Techniques 51

What's in this chapter? 52
Using the mouse 52
Selection 52
Clicking 53
Double-clicking 54
Shift-clicking 55
Pressing 56
Dragging 57
To cancel dragging 57
Selecting grouped icons by dragging 58

Using windows 60
Activating a window 61
Moving a window 61
Resizing a window 62
Zooming a window 63
Closing a window 65
Scrolling a window 66
To scroll line by line 67
To scroll by the windowful 68
To scroll quickly to any part of a directory or document 69
Editing text 70
Inserting text 70
Selecting text 71
Moving text 72
To cut and paste 72
To copy and paste 73
Replacing text 74
Removing text 74
TeachText and Read Me Documents 74

3 Working With the Finder Desktop 77

What's in this chapter? 78
The desktop and the Finder 78
What the Finder manages 79
Who controls the Finder? 80
Working with icons 80
Renaming an icon 80
Another way to rename documents 82
Duplicating documents, folders, or applications 83
Moving a document, folder, or application to a new place on the same disk 84
Copying a document, folder, or application to a different disk 84
Getting information about icons 86
Using the Get Info command 87
Locking a document or application 88
Unlocking a document or application 89
Working with folders, directories, and the hierarchical file system 89
Folders 89
Directories 90
The hierarchical file system 91
Creating a new folder 92
Moving a document, folder, or application from one folder to another 93

Working with documents and applications 94
Creating a document by opening an application 94
Creating a document with the New command in an application 95
Opening an existing document from the Finder 96
Directory dialog boxes 97
Opening an existing document from within an application 98
Using the Save command 101
Using the Save As command 101
Where does your information go? 103
Printing 105
Choosing a printer 105
Using Page Setup with LaserWriter printers 106
Printing a document from within the Finder 108
Printing a group of documents from within the Finder 108
Printing a document from within an application 109
Printing the directory of a disk or folder 109
Using the Trash 111
Removing a document, folder, or application 112
Recovering an item from the Trash 112

4 Finder Menu Commands 113

What's in this chapter? 114
The Apple menu 114
About the Finder 114
Desk accessories 115
The File menu 115
The Edit menu 118
The View menu 119
The Special menu 120
The Color menu 122

5 Desk Accessories 123

What's in this chapter? 124
Where do desk accessories come from? 124
The Alarm Clock 125
The Calculator 127
The Chooser 127
Using the Chooser with a directly connected Apple printer 128
Using the Chooser with devices on AppleTalk 130
Connecting or disconnecting AppleTalk 132
Choosing devices on other AppleTalk networks 133

The Control Panel 133
Using the General Control Panel 134
To set Desktop Pattern (monochrome monitor) 135
To set Desktop Pattern (color monitor) 135
To set Rate of Insertion Point Blinking 137
To set Menu Blinking 137
To set the Time 137
To set the Date 137
To use the RAM cache 138
To set Speaker Volume 139
Using the Color Control Panel 139
To change highlight color 139
Using the Keyboard Control Panel 142
To set Key Repeat Rate 142
To set Delay Until Repeat 142
Using the Monitors Control Panel 143
To set monitor status for a single monitor 143
To set monitor status for multiple monitors 144
Using the Mouse Control Panel 148
To set Mouse Tracking 148
To set Double-Click Speed 149
Using the Sound Control Panel 149
Using the Startup Device Control Panel 150
Key Caps 150
Using Key Caps 151
The Scrapbook 152
Adding an image to the Scrapbook 152
Removing an image from the Scrapbook 153
Moving an image from the Scrapbook to a document 153
Duplicating a Scrapbook file 154

6 **Keyboards 155**

What's in this chapter? 157
Macintosh Plus Keyboard 158
Apple Keyboard 160
Apple Extended Keyboard 162
Optional characters 164
Typing accented characters 165
Easy Access 166
Using sticky keys 166
Using mouse keys 168
Menu command shortcuts 169
Keyboard shortcuts in the Finder 170

7 3.5-Inch Disks 171

What's in this chapter? 172
Different capacities and different formats 172
Preparing 3.5-inch disks for use 173
Initializing both sides of an 800K disk 174
Initializing a disk for use in a 400K disk drive 176
Reinitializing disks 178
Ejecting 3.5-inch disks 180
Using the Eject command in the Finder 180
Dragging a 3.5-inch disk to the Trash 182
Other ways to eject 3.5-inch disks 184
Making copies of 3.5-inch disks 185
Copying a 3.5-inch disk to a hard disk 185
Copying a 3.5-inch disk to another 3.5-inch disk 186
To copy with a hard disk as intermediary 186
To copy with two 3.5-inch disk drives and no hard disk 189
If you have a single 3.5-inch disk drive 190
Protecting the contents of 3.5-inch disks 190
Locking a 3.5-inch disk 191

8 Hard Disks 193

What's in this chapter? 194
Preparing a SCSI hard disk for use 194
Initializing a SCSI hard disk 195
Reinitializing a SCSI hard disk 199
Other Apple HD SC Setup functions 199
Update 199
Partition 200
Test 200
Drive 201
Getting the most out of your hard disk 201

9 Startup Disks 203

What's in this chapter? 204
What is a startup disk? 204
What's inside a System Folder? 205
What else does a startup disk do? 206
If one System Folder is good, will two be better? 206
Hard versus 800K startup disks 207
Small System files 207
Before you update existing startup disks 208

Creating or updating a startup disk 208
For hard disk users 209
Using the Installer 209
To install *Macintosh System Tools* 210
To install *Macintosh Printing Tools* 212
If you don't have a hard disk 214
Scanning order for startup disks 215
Switching startup disks 215
Customizing startup disks 216
To make a startup disk a nonstartup disk 217
Reclaiming space on an 800K startup disk 217

10 **MultiFinder 219**

What is MultiFinder? 220
What you should already know 220
System requirements 221
Finding out how much memory you have 221
What's in this chapter? 222
How to use this chapter 222
Turning MultiFinder on 223
Turning MultiFinder off 224
A sample session 225
What you'll work with 225
What you'll learn 225
The Finder desktop 226
Starting applications 226
The first way to move around: the Apple menu 226
The second way to move around: windows 227
Applications that use the whole desktop 228
The third way to move around: dimmed application icons 229
The fourth way to move around: small icon in the menu bar 229
Desk accessories 230
Background Printing 231
How Background Printing works 231
Making sure Background Printing is on 232
PrintMonitor 233
The PrintMonitor window 234
The Preferences dialog box 236
Stop Printing/Resume Printing 238

Some technical points about memory 238
The Finder memory graph 239
Fragmented memory 240
Creating an unfragmented block of memory 241
Changing application memory size in special situations 241
The Set Startup command 243
Setting startup applications 244
Tips for working with MultiFinder 245

Appendix A
A History of Macintosh System Software 247

System software for the Macintosh 512K 250
System software for the Macintosh 512K enhanced 251
System software for the Macintosh Plus 253
System software for the Macintosh SE and Macintosh II 255

Appendix B
Troubleshooting 258

What's in this appendix? 259
General problems with the Macintosh 259
Problems with MultiFinder 266

Index 269

Preface

THIS MANUAL TELLS YOU WHAT YOU NEED TO KNOW TO USE THE SYSTEM software you received with your Apple® Macintosh® computer. System software is what lets you and your Macintosh communicate.

Before you can start using the system software, you should have set up your computer (plugging it into a power source, attaching the keyboard and mouse, and connecting any peripheral devices, such as printers). If you haven't set up your Macintosh, do so now. You'll find all the instructions you need in your Macintosh owner's guide.

About this manual

The first chapter in this manual is a self-paced tutorial. The remaining chapters—each designed to focus on a specific topic— contain reference material. The idea is to help you locate exactly what you need quickly, without having to conduct a lengthy search when you have a question.

Here's what you'll find inside:

- Chapter 1, "Tutorial: Learning Macintosh Basics," is a straightforward tutorial that starts you off using the Macintosh system software to learn the skills you need.
- Chapter 2, "Basic Macintosh Techniques," begins the reference portion of the manual and provides step-by-step instructions for performing basic tasks with the Macintosh.
- Chapter 3, "Working With the Finder Desktop," briefly describes the tasks you perform on the Finder™ desktop (a metaphor for your base of operations), and includes some important concepts.
- Chapter 4, "Finder Menu Commands," explains the purpose of every command available in each of the menus on the desktop.
- Chapter 5, "Desk Accessories," tells how to use the preinstalled Macintosh desk accessories (mini-applications you can use on the desktop and in most applications).
- Chapter 6, "Keyboards," provides a map to each of the Macintosh keyboards available and tells you how to use your keyboard to accomplish specialized tasks.
- Chapter 7, "3.5-Inch Disks," explains how to prepare and work with the small, portable disks that you will be using with your Macintosh.
- Chapter 8, "Hard Disks," takes you step by step through the process of initializing (formatting) an Apple SCSI hard disk and offers tips on making the best use of your hard disk.
- Chapter 9, "Startup Disks," explains what a startup disk is and provides step-by-step instructions for creating and updating a startup disk—whether it's a 3.5-inch disk or a hard disk.
- Chapter 10, "MultiFinder," describes the new MultiFinder™ multitasking operating system you can use with your Macintosh and includes a brief sample session to get you started.
- Appendix A, "A History of Macintosh System Software," provides a chart that tells you which versions of system software work best on different versions of the Macintosh, and a set of tables that summarize changes to the software over time.

- Appendix B, "Troubleshooting," describes minor problems that can occur and offers remedies you can try on your own.

At the end of the manual, you'll find an index, and inside the back cover is a Tell Apple card. After you've spent some time with your computer, be sure to fill out the card and send it in. We want to know what you think about Apple products and training materials.

Using the chapters in this manual

You don't have to read the chapter contents in any particular order. The topics covered, and the tasks associated with each topic, are described independently. Here's an illustration to show you how to take advantage of the structure of each chapter.

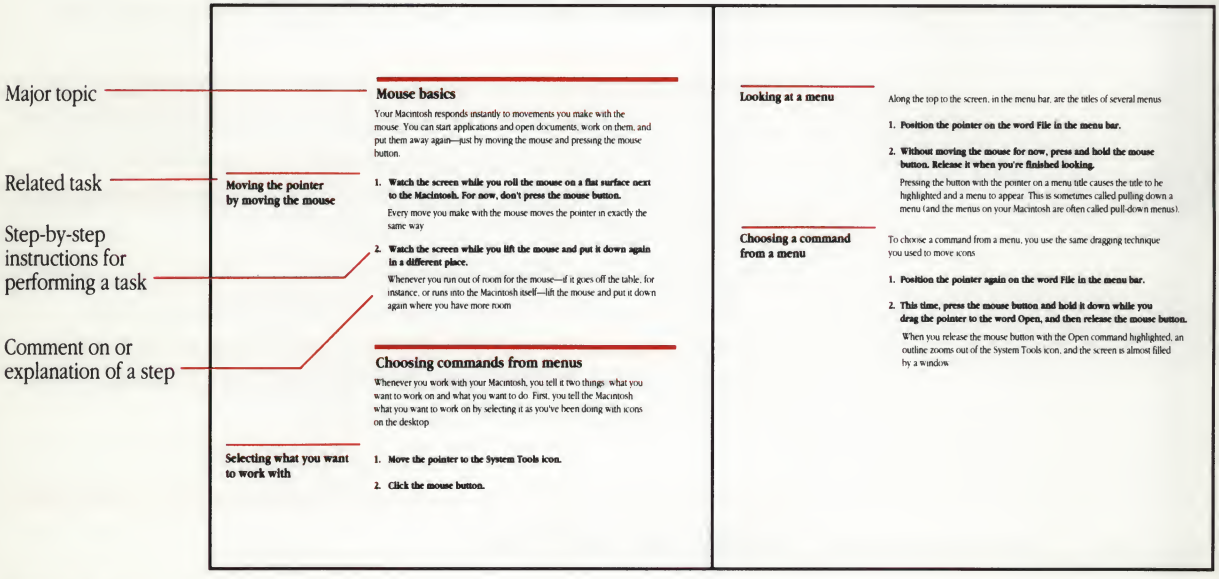


Figure P-1
How to use the chapters in this manual

Associated with each task, the numbered steps (printed in **boldface** type) describe the actions you must take to perform that task. If you feel rusty and want a quick refresher to help you complete a task you haven't done lately, just read the bold type and do what it says.

Some tasks are so basic that all you need to know is how to do them. In other cases, you'll find comments or explanation in plain type following a step. You can decide whether you want—or need—to read this information.

About the other manuals

Along with this book, your Macintosh came with some other manuals. *You won't have to read them all to use your computer.* They're there to give you information when you need it, but you'll quickly be up to speed with very little "required reading." Here's what the other books are for:

- **The Macintosh owner's guide:** If your Macintosh has not been set up yet, the owner's guide is the first manual you need. It contains complete instructions for setting up your computer. It also offers a basic explanation of the major components of the system and how they work together with software. The owner's guide also provides some technical information, a summary of technical documentation on Macintosh computers, and a glossary. This glossary includes **boldface** terms you may encounter in both the owner's guide and the book you are now reading.
- ***Macintosh Utilities User's Guide:*** This is the manual that explains how to use the two utilities disks that came with your computer (*Macintosh Utilities* disks 1 and 2). These disks contain special programs you'll use occasionally to customize your system to meet your specific needs, and to update it and keep it running efficiently.
- ***HyperCard User's Guide:*** This manual explains an exciting new software product—HyperCard™—that's included free with your Macintosh. HyperCard is a personal toolkit for using, customizing, and creating information. You'll want to read the *HyperCard User's Guide* only after you've become familiar with your Macintosh.

Using the manuals

Depending on your level of computer experience, you can use the manuals in a variety of ways.

For the beginner

Here are suggested steps to follow:

1. If you haven't set up your Macintosh, go to Chapter 1 of the owner's guide for step-by-step instructions. When you've set up the computer, you may choose to start the training disk—also explained in the same chapter.

2. For a self-paced tutorial that lets you use the Macintosh system software, go to Chapter 1 of the manual you are reading now.
3. If your computer includes an internal hard disk (or you have an external Apple SCSI hard disk), see Chapter 8, "Hard Disks," for instructions on preparing the disk for use.
4. If you have brand-new, never-been-used 3.5-inch disks, you'll want to initialize them. See "Preparing 3.5-Inch Disks for Use" in Chapter 7.
5. Make backup copies of the master system software and utilities disks that came with this manual. See "Copying a 3.5-Inch Disk to Another 3.5-Inch Disk" in Chapter 7.
6. Create a startup disk. It doesn't matter whether your startup disk will be a hard disk or a 3.5-inch disk. The instructions you want are in the section "Creating or Updating a Startup Disk" in Chapter 9.

If you have other devices to attach to your computer, turn to the manuals that came with those devices for instructions on connecting them correctly. Also, be sure to look through the manuals that came with the application programs you'll be using with your computer.

For the experienced user

Even though you may not need to learn all the skills described in this manual, or read everything in the owner's guide, you'll probably want to look at the following:

1. Read Chapter 1 in your owner's guide for instructions on setting up your computer. That manual also contains useful information on the features and internal workings of your Macintosh.
2. If your computer includes an internal hard disk (or you have an external Apple SCSI hard disk), see Chapter 8 of this manual for instructions on preparing the hard disk for use.
3. Make backup copies of the master system software and utilities disks that came with this manual. See "Copying a 3.5-Inch Disk to Another 3.5-Inch Disk" in Chapter 7 of this manual.
4. Use the Installer to create a startup disk. See "Creating or Updating a Startup Disk" in Chapter 9 of this manual.
5. Read about MultiFinder in Chapter 10.
6. Use the *Macintosh Utilities User's Guide* to learn about utilities that may be new to you.

CHAPTER 1

Tutorial: Learning Macintosh Basics

WHO NEEDS THIS CHAPTER?

This chapter teaches you fundamentals— the basic skills you need to use your Apple® Macintosh® computer. Even if you have experience with other computers, you'll probably need to learn some new techniques. But the great thing about the Macintosh is that once you learn these skills, you'll use them every time you use your computer—no matter what application program you're running. That's because almost all Macintosh applications use the **Macintosh User Interface**—the features that allow you and your computer to communicate. Because the interface is consistent, you won't have to relearn how to use your computer every time you get a new application.

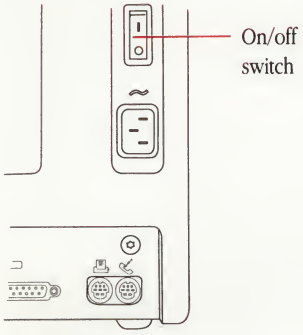


Figure 1-1
On/off switch on the back of the Macintosh Plus

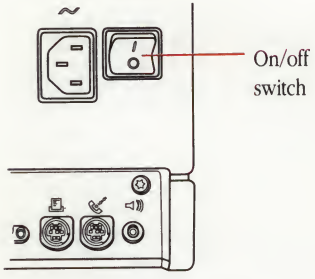


Figure 1-2
On/off switch on the back of the Macintosh SE

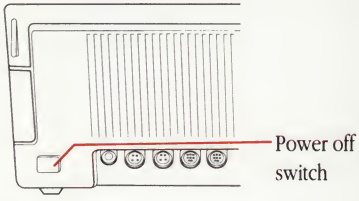


Figure 1-3
Power off switch on the back of the Macintosh II

Getting ready

At this point your computer should be plugged in and ready to go. If that is not the case, go to Chapter 1 in your owner's guide and follow the instructions there for setting up your Macintosh.

Before you start the tutorial, you need to turn off your Macintosh.

- If it's already turned off, skip ahead to "Starting the Tutorial."
- If your Macintosh is turned on at this time, turn it off. For help in doing this, read the appropriate instructions in one of the following sections ("Macintosh Plus," "Macintosh SE," or "Macintosh II").

 Once you've turned off your computer, go to "Starting the Tutorial."

Macintosh Plus

The on/off switch is located on the back of the Macintosh Plus. Figure 1-1 shows you where it is. Press the switch to turn off the computer.

Macintosh SE

The on/off switch is located on the back of the Macintosh SE. Figure 1-2 shows you where it is. Press the switch to turn off the computer.

Macintosh II

The correct way to turn off a Macintosh II is to choose the Shut Down command from the Special menu. If you are completely unfamiliar with using the mouse to choose a command from a menu (and don't have access to someone who can do it for you), you can use the power off switch. The power off switch is located on the back of the main unit. Figure 1-3 shows you where it is. Press the switch once to turn off the computer. (You may have to wait a second or two for the power to go off.)

△ **Important** The power off switch is *not* intended for regular use. If you have used a Macintosh computer before, choose the Shut Down command from the Special menu to turn off the computer. (If you aren't sure how to do this, go ahead and use the power off switch this time.) △

Starting the tutorial

Follow these steps to turn on your Macintosh and start the tutorial:

1. **Insert the disk labeled *Macintosh System Tools* into a 3.5-inch disk drive, metal end first, label side up.**

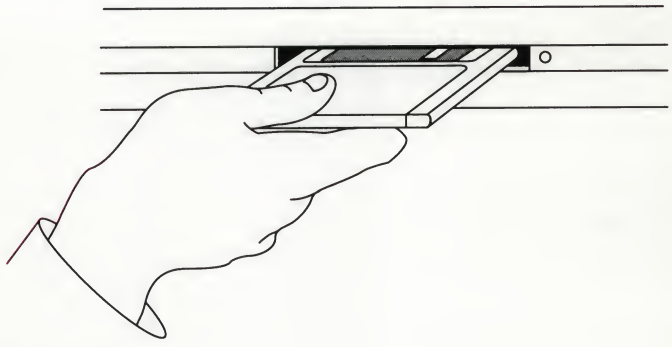


Figure 1-4
Inserting a 3.5-inch disk

When the disk is most of the way into the disk drive, the Macintosh automatically pulls it in and into place.

2. Switch on your computer.

A beep lets you know it's started, and the soft noise you may hear is the Macintosh getting information from the disk. An **icon** (a small picture) representing a Macintosh appears, followed shortly by a message welcoming you to Macintosh.

In a few seconds you'll see this screen:

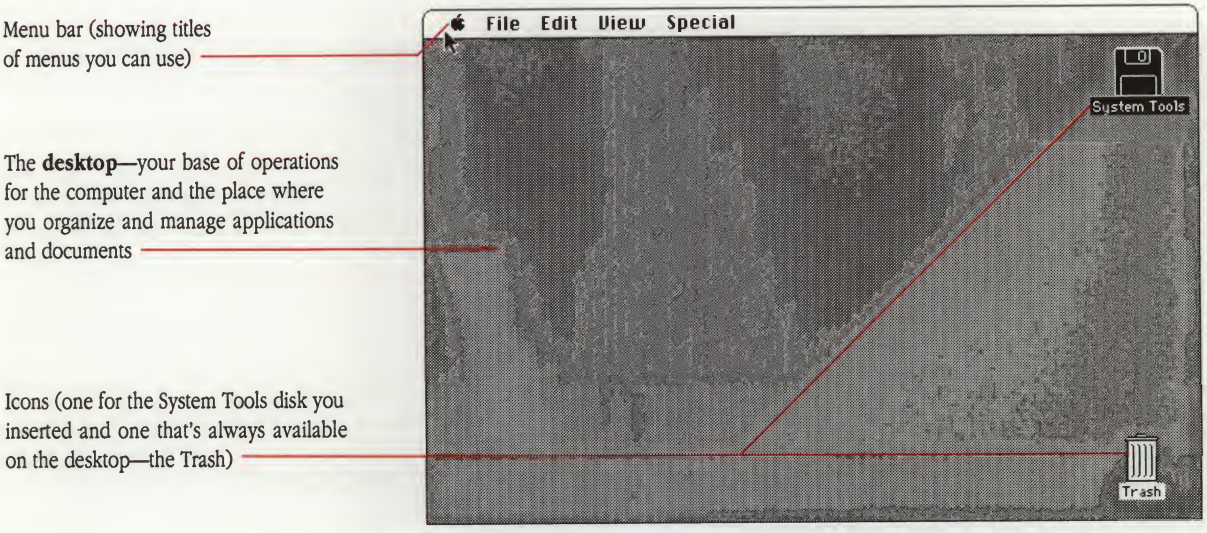


Figure 1-5
First screen

❖ *Different screen?* If your screen doesn't look like this, someone else may have used this lesson and arranged the desktop in a different way.

If your computer has an internal hard disk drive and someone has already set it up, you'll see an extra icon that represents the hard disk. For the time being, just ignore the hard disk icon as you go through the rest of this tutorial.

How to use this tutorial

The tutorial gives you practice in the skills you need to work with your Macintosh. It is designed so that you begin with the most elementary skills and build on those skills, performing increasingly complex procedures. In other words, the best way to take the tutorial is from front to back, exactly as it's presented.

The actions you take to practice these new skills appear as numbered steps in **boldface** type. Accompanying some steps you'll find comments or explanation in plain type. Feel free to accommodate your own learning style. It's a good idea to perform the actions in the numbered steps, but you can decide whether you want or need to read the comments between steps.

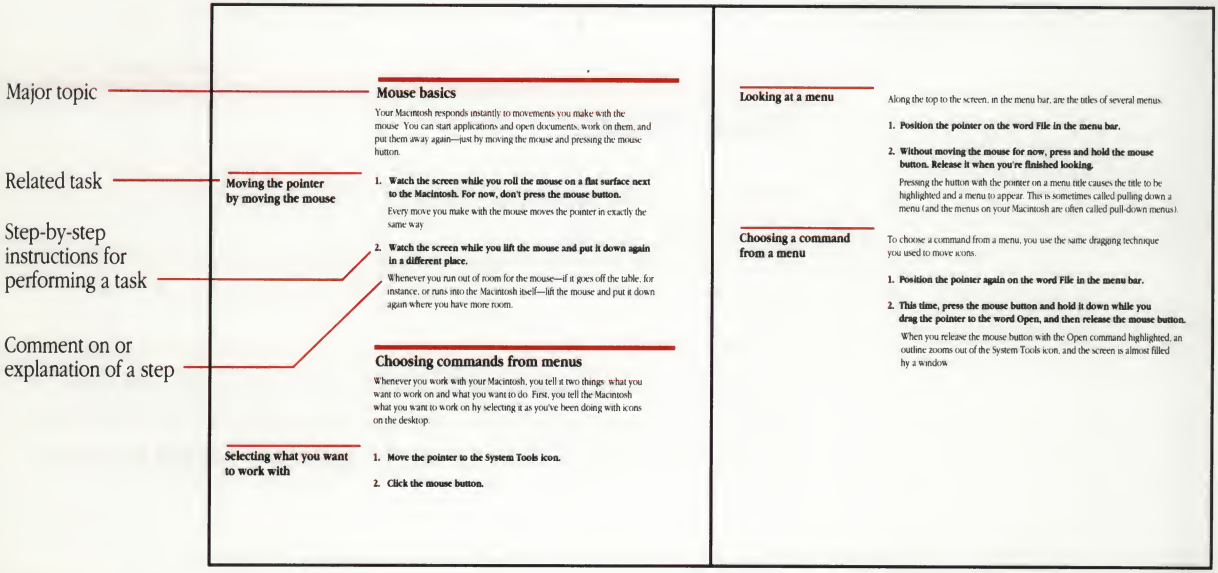


Figure 1-6
A section from this chapter

- *When you want to take a break:* You can complete the tutorial in one sitting, or you can take a break whenever you want to. Good places to take breaks are between major topics. When you decide to take a break, it's best not to turn off the computer (or you'll have to retrace your steps from the beginning).

What you'll learn

In this tutorial you'll be learning skills grouped under these topics:

- using the mouse—moving the pointer and moving objects
- choosing commands from menus—making things happen
- working with windows—resizing, moving, and closing them
- using an application—creating, editing, and saving **documents**
- organizing your work in folders—learning to use the file system

A **document** is anything you create with a Macintosh application, such as a letter, a spreadsheet, or a picture.

It may sound like a lot, but you can learn these skills in about an hour. You can take a break whenever you want. Be sure to go at your own pace—enjoy yourself!

Mouse basics

In this part of the tutorial you'll practice

- moving the pointer
- selecting icons
- dragging icons

Your Macintosh responds instantly to movements you make with the mouse. You can start applications and open documents, work on them, and put them away again—just by moving the mouse and pressing the mouse button.

Moving the pointer by moving the mouse

1. **Watch the screen while you roll the mouse on a flat surface next to the Macintosh. For now, don't press the mouse button.**

 Every move you make with the mouse moves the **pointer** in exactly the same way.

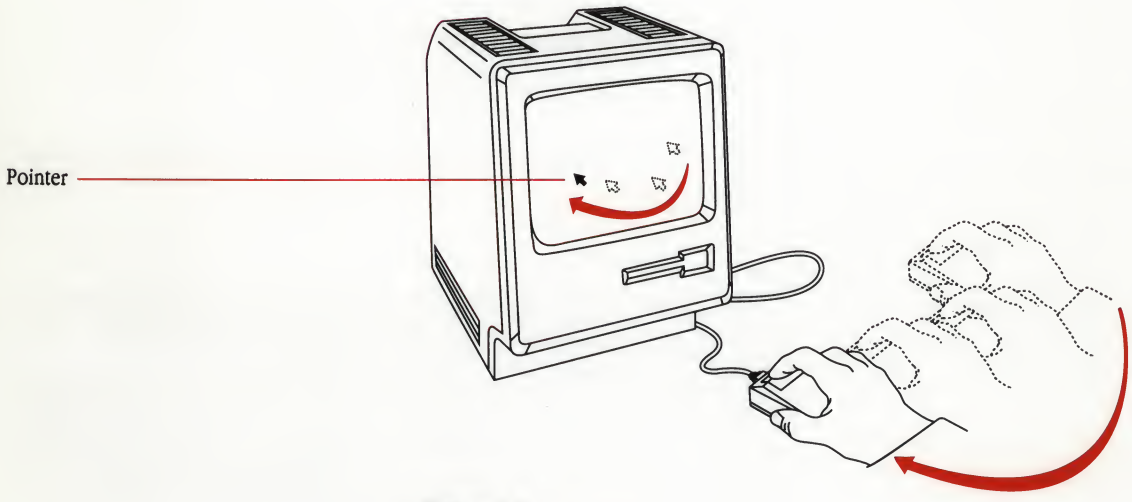


Figure 1-7
Controlling the pointer

You'll have the best control if you hold the mouse with its cable pointing directly away from you and your index finger on (or close to) the mouse button.

2. **Watch the screen while you lift the mouse and put it down again in a different place.**

 Notice that lifting the mouse doesn't move the pointer.

 Whenever you run out of room for the mouse—if it goes off the table, for instance, or runs into the Macintosh itself—lift the mouse and put it down again where you have more room.

 Using the mouse might feel a little awkward at first, but it will soon be second nature.

Selecting an icon by clicking

The Macintosh lets you organize your desktop any way you want, so one thing you can do with your mouse is arrange the desktop to suit you. This may not seem like much now, but you'll appreciate it as your desktop fills up with icons. To move an icon, you first **select** it to let your Macintosh know that this is the object you want to work on next. You select icons by using a technique called **clicking.**

1. **Position the pointer on the Trash icon.**

 Make sure the tip of the pointer is on the icon.

2. **Click the icon by pressing and immediately releasing the mouse button.**

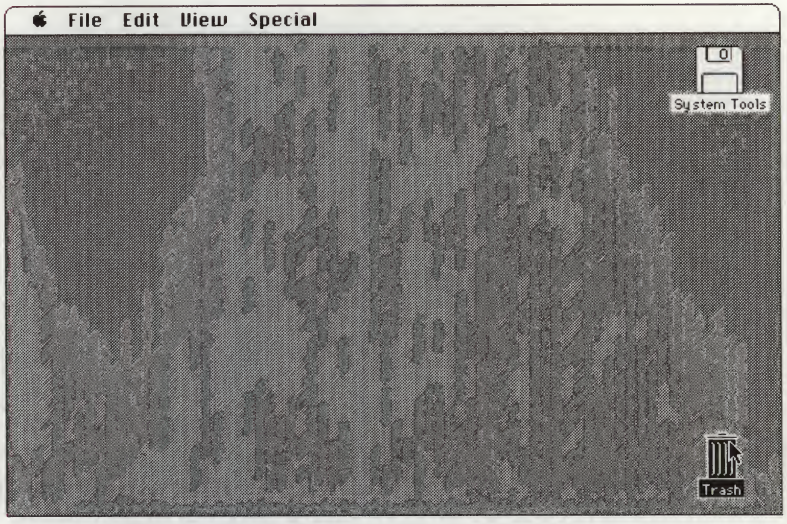


Figure 1-8
Selecting an icon

As you click the icon, it becomes **highlighted.** What was white is now black, and vice versa. The highlighting shows that you selected it. Notice that the System Tools icon is no longer highlighted. *Selecting* has a specific meaning in the Macintosh vocabulary: you always select the object or information you want to work on next.

3. **Click the System Tools icon.**

 Now the System Tools icon is selected, and the Trash icon is no longer selected.

 When clicking, try not to move the mouse as you release the mouse button. Practice clicking each icon in turn until you can click without moving the mouse at all.

Dragging an icon

Once you've selected an icon, you can use the mouse to move the icon with a technique called **dragging.**

1. **Position the pointer on the Trash icon.**

2. **Press and hold the mouse button while you move the mouse.**

 When you press the mouse button, you select the icon. As you move the mouse, the pointer moves and drags an outline of the icon and its name along with it. So you always know where you were—and where you're going.



Figure 1-9
Dragging an icon

3. **Release the mouse button.**

 The icon snaps to its new place.

4. **Now drag the System Tools icon.**

 Move the icon all the way to the left. Notice that it won't go off the edge of the screen, so you don't have to worry about losing it. Remember, lifting the mouse has no effect on what you're doing (but releasing the mouse button does end the current dragging).

5. **Select the Trash icon and drag it to the top of the screen until the pointer is in the menu bar, and then release the mouse button.**

 This time the Trash icon stays where it was when you selected it. By moving the pointer into the menu bar and releasing the mouse button you canceled dragging. Whenever you change your mind, this is how you cancel a drag in process.

Practice dragging until you can easily move the icons wherever you want them.

What you've learned about the mouse

You've learned how to use the mouse to point to and select icons, and you've seen how you can drag icons to arrange them on your desktop. Next you'll learn how to act on what you select by choosing a command from a menu.

Choosing commands from menus

In this part of the tutorial you'll practice

- pulling down a menu
- choosing a command

Whenever you work with your Macintosh, you tell it two things: what you want to work on, and what you want to do. First, you tell the Macintosh what you want to work on by selecting it as you've been doing with icons on the desktop. Then you tell the Macintosh what you want to do with the selection. One way to do this is by **choosing** a command from a menu.

Selecting what you want to work with

1. **Move the pointer to the System Tools icon.**
2. **Click the mouse button.**

 This is the same thing you've done before. Now the System Tools icon is selected, and you can choose a command for it.

Looking at a menu

Along the top of the screen, in the **menu bar,** are the titles of several **menus.**



Figure 1-10
Menu bar

1. **Position the pointer on the word *File* in the menu bar.**

2. **Without moving the mouse for now, press and hold the mouse button. Release it when you're finished looking.**

 Pressing the button with the pointer on a **menu title** causes the title to be highlighted and a menu to appear. This is sometimes called *pulling down* a menu (and the menus on your Macintosh are often called *pull-down menus*).

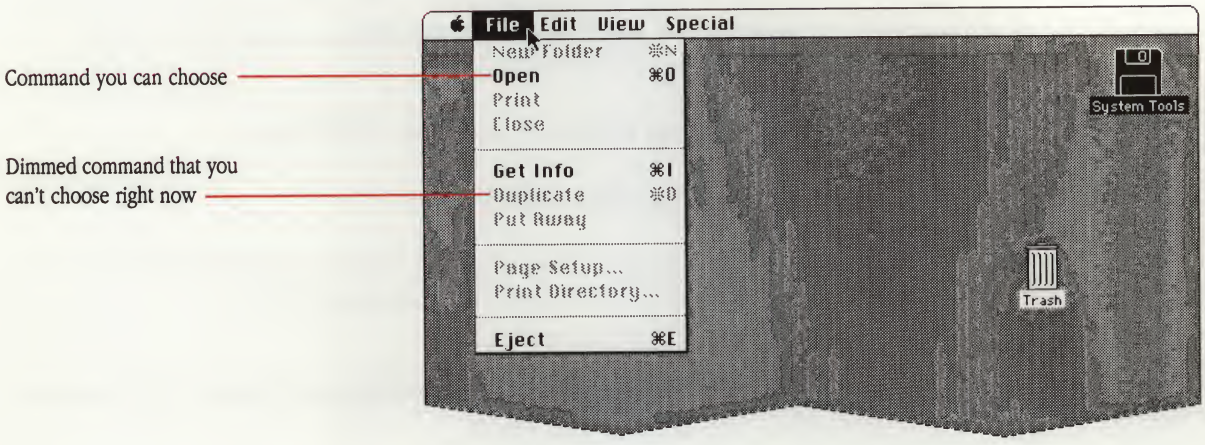


Figure 1-11
File menu pulled down

The menu contains commands you can carry out on what you've selected. Among other things, the File menu lets you open icons. (Notice the word *Open* in the menu.)

Sometimes commands appear dimmed in a menu (for example, the Print command in Figure 1-11). When a command is dimmed, you can't use it—usually because it's irrelevant to what you're doing.

When you release the mouse button, the menu disappears.

Choosing a command from a menu

To choose a command from a menu, you use the same dragging technique you used to move icons

1. **Position the pointer again on the word *File* in the menu bar.**
2. **This time, press the mouse button and hold it down while you drag the pointer to the word *Open,* and then release the mouse button.**

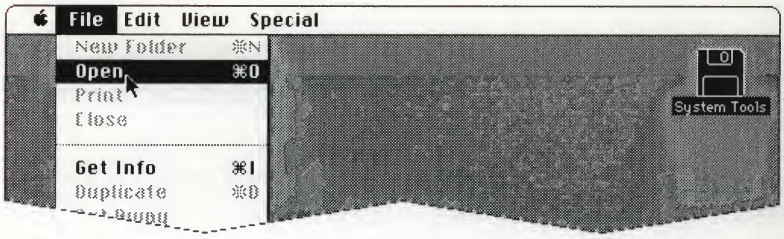


Figure 1-12
Choosing a command

As you drag through a menu, each usable command is highlighted in turn. (Dimmed commands will not be highlighted.)

When you release the mouse button with the Open command highlighted, an outline zooms out of the System Tools icon, and the screen is almost filled by a **window.** The System Tools icon is dimmed to show that the icon has been opened into a window.

Any time you change your mind about choosing a command, you can move the pointer off the menu and release the mouse button. Nothing is chosen unless you release the mouse button while one of the commands is highlighted.

What you've learned about choosing commands

To sum up what you've practiced: first you selected something (the System Tools icon), and then you chose a command (Open). You'll follow this pattern whenever you work with your Macintosh: *select* an item, then *choose* an action for it.

- *Need a break?* Remember, you can take a break from this lesson at any point, leave the Macintosh switched on, and pick up where you left off.

Working with windows

In this part of the tutorial you'll practice

- changing the size of a window
- moving a window
- arranging windows that overlap
- making a window active
- closing a window
- using the scroll bars on a window

You'll see a lot of windows as you work with your Macintosh. The window on your screen now displays a **directory** of icons representing the contents of the System Tools icon.

A **directory window** is any window that shows you the contents of a disk or folder.

Different windows may serve different purposes (some are areas where you do work, some give you information, and so on). Figure 1-13 illustrates the features most windows have in common.

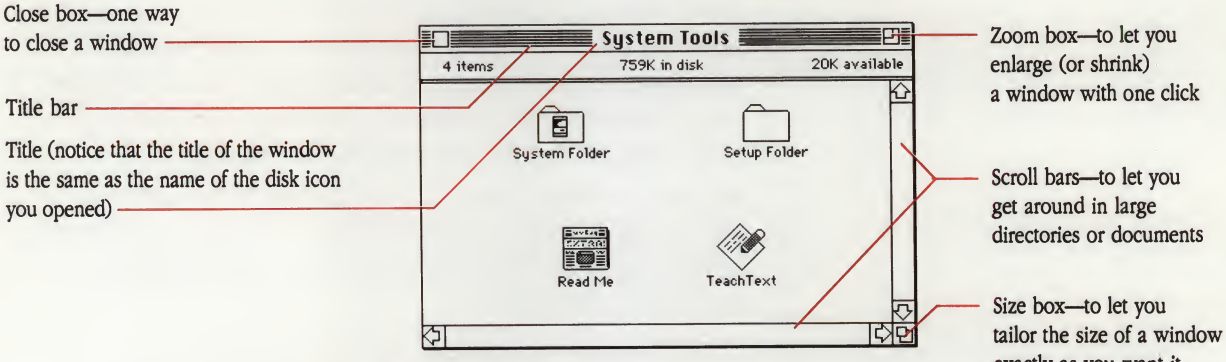


Figure 1-13
Directory window for the System Tools disk icon

In this section of the tutorial, you'll see how to use these features of a window to manipulate it.

Changing the size of a window

When you're working on a document on your desktop, it's great to have a wide-open window so you can really see what's there. But small windows also have advantages. They take up less space on your desktop, and you can move them around to see the contents of more than one window at a time.

One way to change a window's size is to use the **size box** in the bottom-right corner of the window.

1. **Position the pointer on the size box, press and hold down the mouse button, and drag up and to the left.**

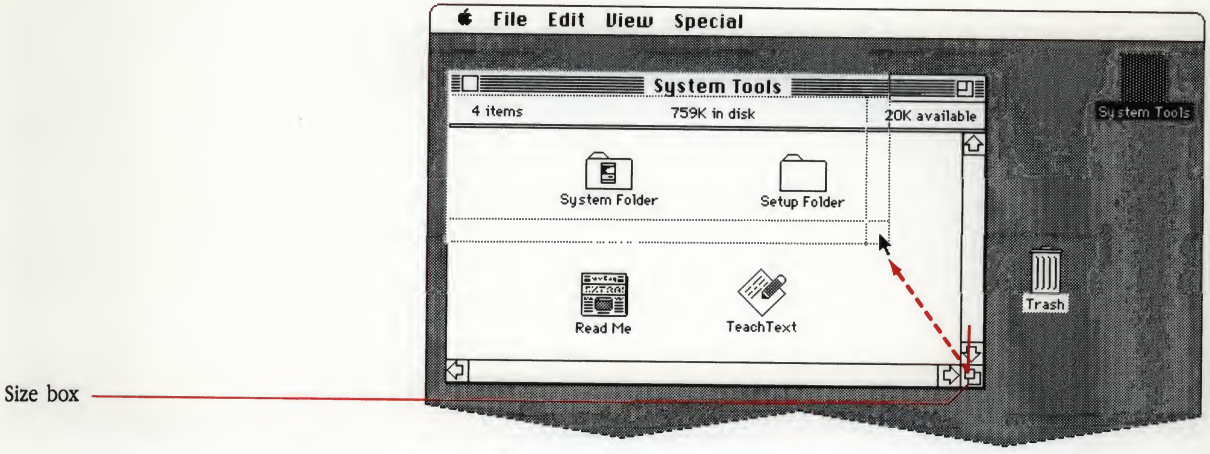


Figure 1-14
Using the size box

2. **Release the mouse button.**

 As you drag, a dotted outline follows. The farther to the left you drag, the narrower the outline becomes; the farther upward you drag, the shorter it becomes. When the outline is as small as you can make it, it stops moving. When you release the mouse button, the window changes size.

 The contents of the window don't change at all when you change a window's size. The only thing that changes is how much you can see.

Zooming a window

Another way to change the size of a window is to use the **zoom box.** In a way, the zoom box is easier to use than the size box because you don't have to drag anything; all you do is click. On the other hand, you cannot use the zoom box to make fine adjustments in the size and shape of a window.

1. **Position the pointer on the zoom box and click.**

 The window zooms out to nearly fill the screen.

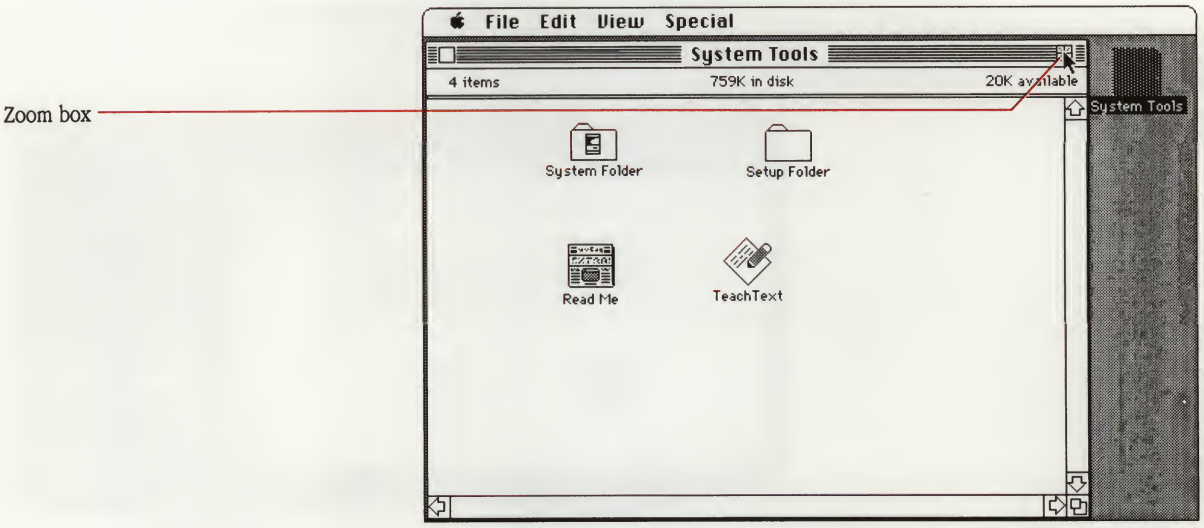


Figure 1-15
Zooming a window

2. **Click the zoom box again.**

 The window returns to its former size. Using the zoom box lets you use almost every square inch of the screen for what you're currently working on and, with a single click, brings you back to your former view.

Experiment with controlling the size of the System Tools window. Drag the size box down and to the right to make the window bigger again. Then try all different lengths and widths. Use the zoom box and notice how the Macintosh always shrinks the window back down to whatever size it was before you zoomed it out.

Moving a window

Just as you moved icons, you can move windows on your desktop. To move a window, drag it by its title bar. Don't, however, drag it by the zoom box or the **close box,** the small box on the left in the title bar. The close box is just for closing the window.

1. **Position the pointer anywhere on the title bar of the System Tools window (except in the zoom or close boxes).**

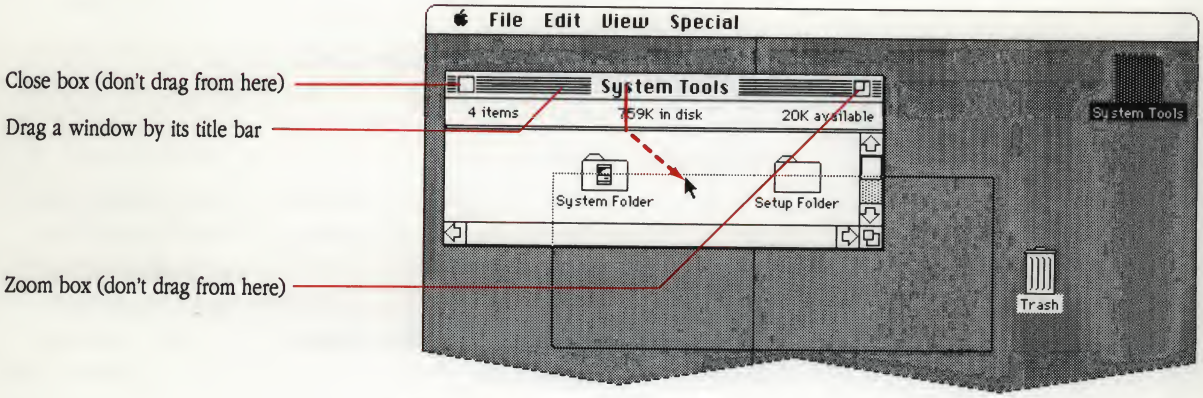


Figure 1-16
Moving a window

2. **Drag the System Tools window by pressing and holding down the mouse button while you move the mouse.**

3. **Release the mouse button.**

 Just as when you dragged icons, a dotted outline of the window follows your movements. When you release the mouse button, the window moves to the new location. If you release the mouse button before you have the window where you want it, just "pick the window up" again.

 If you change your mind about moving it, cancel the drag by moving the pointer into the menu bar and releasing the mouse button. Just as icons stayed within the limits of the desktop, so do windows. You can't lose them by dragging too far.

Practice your new skills. When you can manipulate the window easily, making it any size and putting it anywhere you want on (or partially off) the desktop, go on to the next section.

Opening another icon to see another window

Use your new window-handling expertise to get the System Tools window out of the way if you need to. Shrink it down and move it around so you can see the Trash icon.

1. **Select the Trash icon.**

2. **Choose Open from the File menu.**

 As you've done before, move the pointer to the File menu title, press the mouse button, drag to the Open command, and release the button.

A second window appears on the desktop, probably overlapping the first (depending on where you left the first window and what size you made it).

Overlapping windows

With the Macintosh, you can have many windows on your desktop at the same time. When there's more than one window, the Macintosh needs to know which one you're working on at the moment so that the commands you choose and the text you type end up in the right place. The window you're working on is always the **active window.** (With several windows open, the active window is likely to be in front of the other windows.) The active window's title bar is highlighted with narrow horizontal lines on either side of the title.

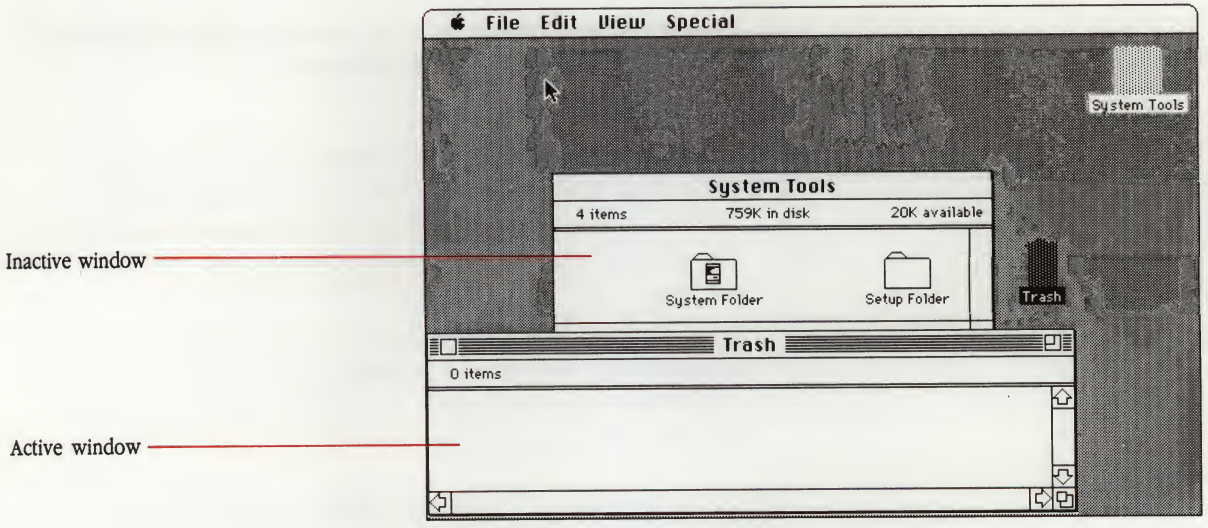


Figure 1-17
Overlapping windows

When you opened the Trash icon, it automatically became the active, frontmost window—the window you're working in. The System Tools window is also open on the desktop, but it's no longer the active window. To work in the System Tools window again, you make it active by clicking once anywhere inside it.

If you left the System Tools window small before you opened the Trash window, it may be completely hidden by the Trash window now. You know how to move windows and change their size, so if you can't see the System Tools window, move the Trash window or change its size until you can see the System Tools window again. It doesn't have to be completely visible. As long as you can see part of it, you can make it active.

Making a window active

1. Click in the System Tools window.

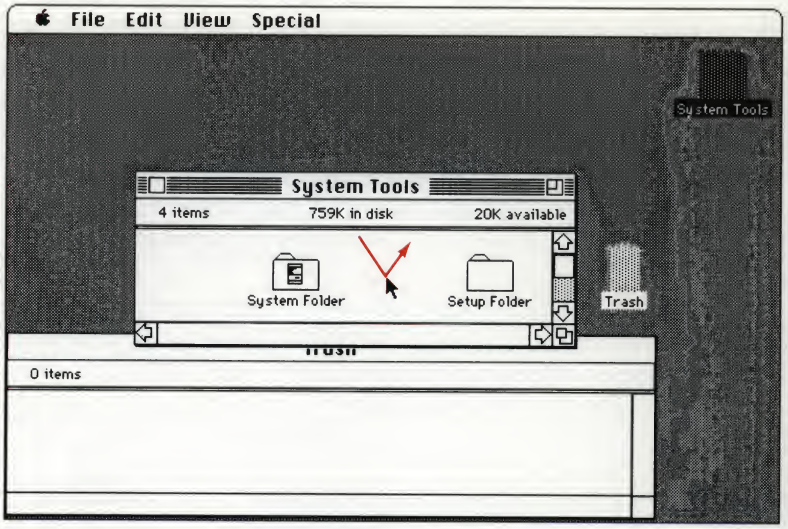


Figure 1-18
Making a window active

The window is brought to the front of the desktop. Its title bar is highlighted, and scroll bars and a size box appear to show it's the active window. Whenever you want to work in a window that isn't already active, you first make it active by clicking in it.

The position and size of your windows might not look exactly like the ones here. Your Macintosh does exactly what you tell it to do; the size and position of your windows are up to you.

2. **Click in the Trash window.**

 Now it becomes active and moves in front of the System Tools window again.

Experiment with arranging your desktop—making each window active in turn, changing its size, and moving it.

Opening other icons

You can open icons inside a directory window, just as you opened icons on the desktop. You know how to open an icon by selecting it and choosing Open from the File menu. And there's another way to do the same thing—a shortcut called **double-clicking.** Next, you're going to use this technique to open the System Folder in the System Tools window. (If necessary, first make the Trash window smaller; then make the System Tools window active and large enough that the System Folder icon is visible.)

1. **Position the pointer on the System Folder and quickly press and release the mouse button twice.**

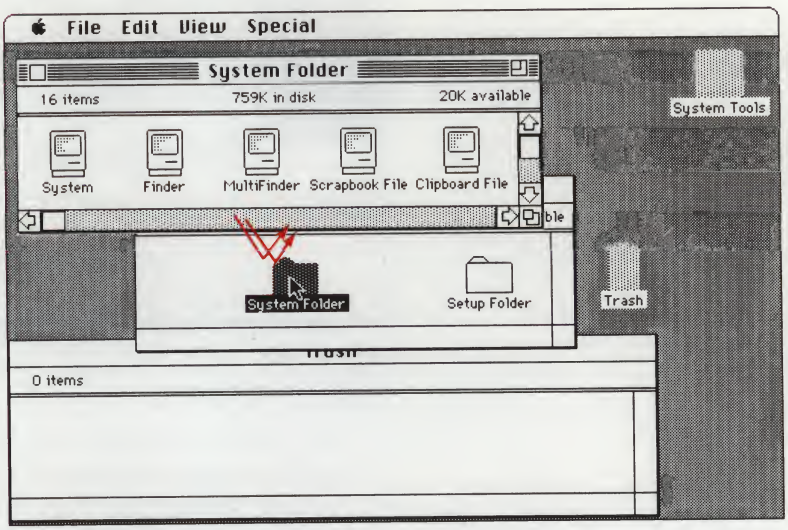


Figure 1-19
Opening an icon in a window

If the System Folder window doesn't appear when you double-click, shorten the interval between your clicks. That way the Macintosh will be able to interpret your action as a double-click, and not just as insistent single clicks. Now you have two ways to open icons.

Inside the System Folder are icons that represent system files; these contain information the Macintosh needs in order to operate.

2. **Open the Setup Folder, either by double-clicking it or by selecting it and choosing Open from the File menu.**

 If necessary, first move or change the size of the System Folder window.

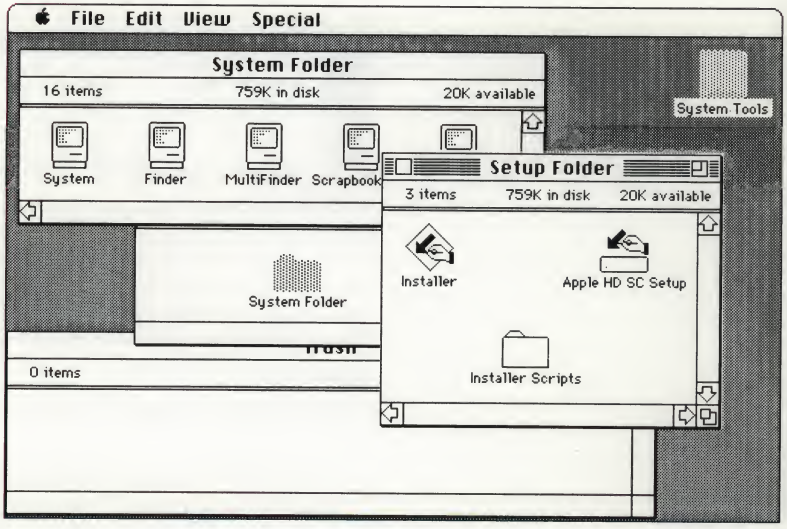


Figure 1-20
Directory window for the Setup Folder

The Setup Folder contains icons that represent **utility programs.** While you use the system software in the System Folder every time you switch on the Macintosh, utilities are tools you use occasionally. You use the utilities in the Setup Folder to set up a hard disk drive (if you have one) and to install Macintosh system software on other disks. (You also received two utilities disks with your Macintosh. The utilities on those disks are described in the *Macintosh Utilities User's Guide.*)

Closing a window

You can have many windows on your desktop, but to keep things tidy, you might want to close some when you're finished working on them, and open them again when you need them.

1. **Make the Trash window active by clicking in it.**

2. **Choose Close from the File menu.**

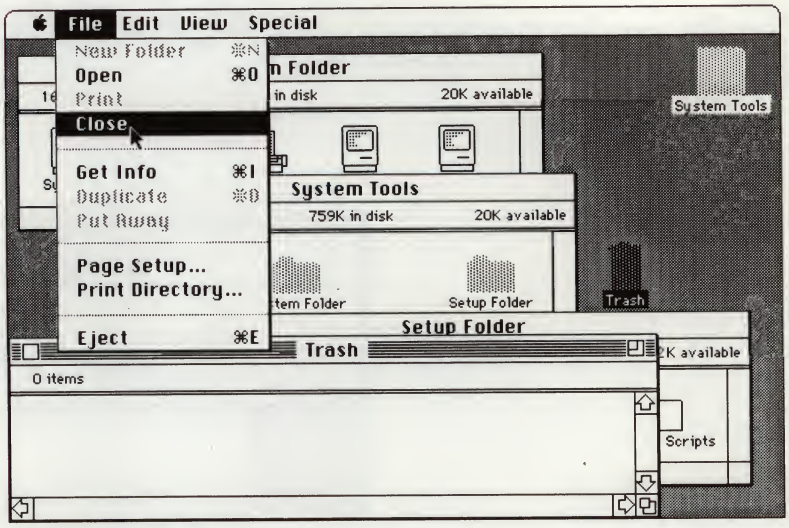


Figure 1-21
Using the Close command to close a window

The window collapses back to an icon. Whenever you choose Close from the File menu, the frontmost, active window is closed, and the next window behind it becomes active.

Now close the Setup Folder window by using another shortcut. The close box in the title bar lets you close an active window with a single click.

3. **If it's not already active, click the Setup Folder window to make it active.**

 Remember, when you can see horizontal lines in the title bar, a window is active.

4. **Click the close box.**

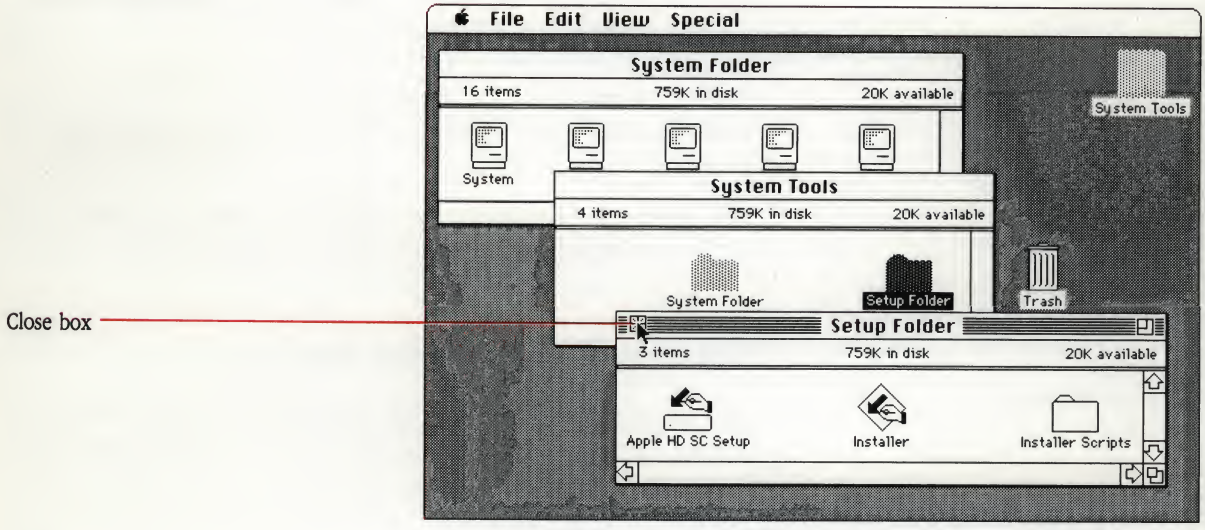


Figure 1-22
Using the close box to close a window

The result is the same as when you choose Close from the File menu.

Using the scroll bars to see more

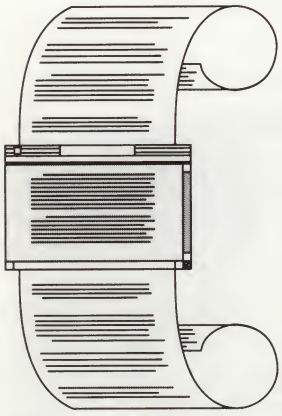


Figure 1-23
Scrolling a document

Windows on the desktop often can't show you the entire directory or document all at once, even when you've made the window very large. There's often more information than can fit in the window at one time.

The scroll bars in an active window let you move what's in the window so you can see more of it.

1. **Click the System Folder window to make it active.**

2. **Make the System Folder window small enough that some of the icons are hidden from view.**

 Position the pointer in the size box, press the mouse button, and drag up and to the left to shrink the window. When it's small enough, release the mouse button.

 Notice that when you release the mouse button with some icons hidden from view, one or both scroll bars become active (that is, they turn gray).

3. **Click the scroll arrow that points down.**

 More icons come into view. You can scroll down, up, right, or left by clicking the corresponding scroll arrow. You can also scroll by dragging the box in the scroll bar.

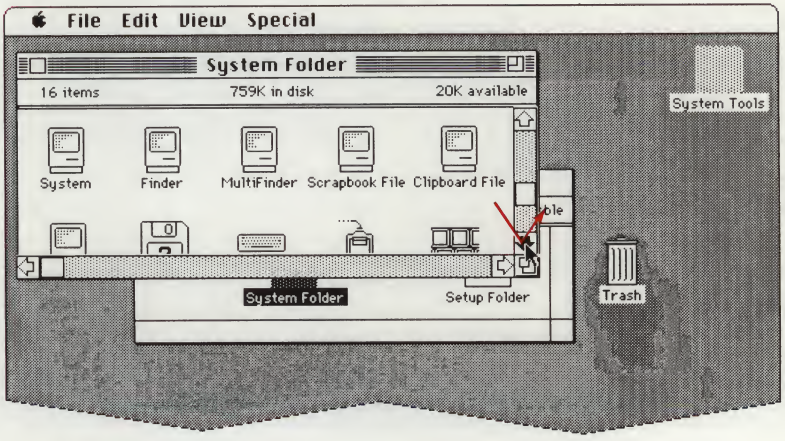


Figure 1-24
Using scroll arrows

4. **Drag the box in the vertical scroll bar to the top of the scroll bar and release the mouse button.**

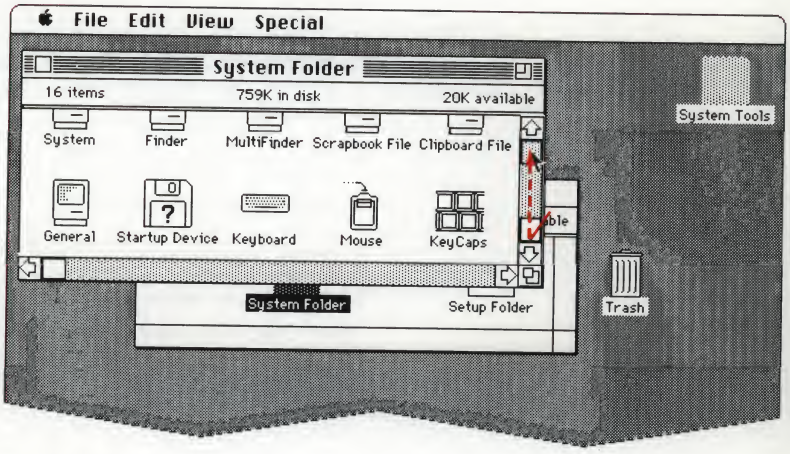


Figure 1-25
Using the scroll box

Nothing in the window moves until you release the mouse button.

What you've learned about working with windows

At this point you've practiced all the skills you need to work with windows. You've changed their size, moved them around, made inactive windows active, used scroll bars to see more information, and closed windows to get them out of the way.

You might be wondering what all this has to do with your work—the documents you'll create with Macintosh applications. You'll use the skills you just learned in nearly all applications. You usually select information and choose commands in consistent ways. And windows are always opened and closed, changed in size, moved, and made active using the same techniques you just learned.

❖ *Need a break?* Remember, you can take a break from this lesson at any point, leave the Macintosh switched on, and pick up later where you left off.

Using applications

In this part of the tutorial you'll practice

- starting an application
- creating a document
- saving your work on a disk
- editing text in a document
- saving different versions of a document with different names

Most of the applications you'll use with the Macintosh come on their own disks. TeachText—the sample application you'll use in the next few sections—is already on *Macintosh System Tools*, the disk you used to start this tutorial.

Starting an application

1. **Close the System Folder window if you haven't done so already.**

2. **Make the System Tools window larger, if necessary, to see the TeachText icon.**

 Use the technique you learned earlier for changing the size of a window.

3. **Open the TeachText icon, either by double-clicking it or by selecting it and choosing Open from the File menu.**

 You see the TeachText screen—an empty window ready for you to type in some text.

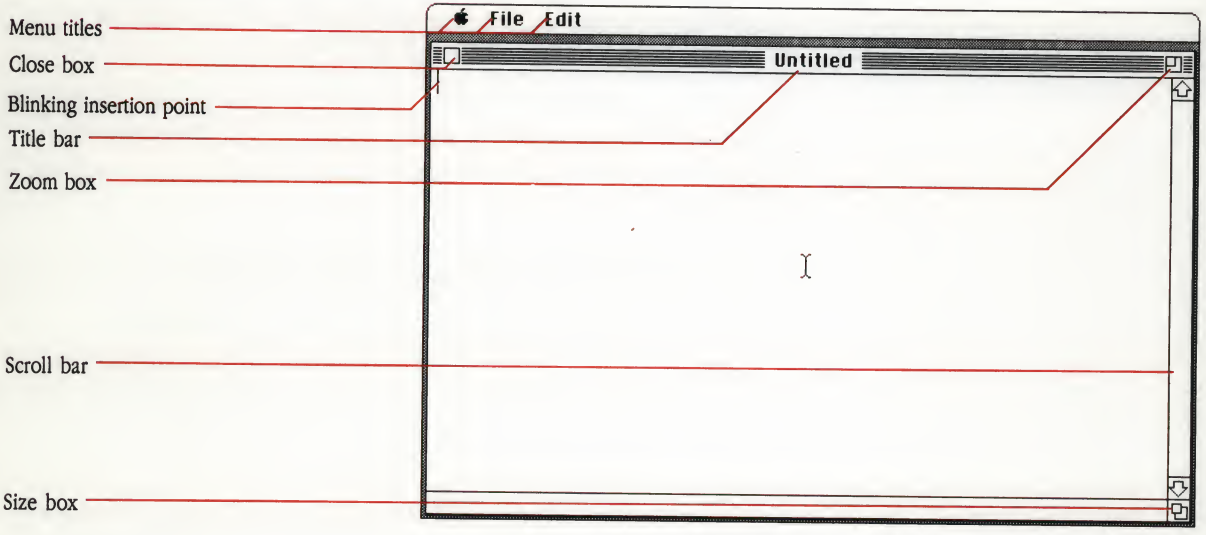


Figure 1-26
TeachText screen

Like most applications, TeachText has its own menus, and its window has a title bar, close box, size box, zoom box, and scroll bars. Also like most applications, TeachText always opens with an "Untitled" window. You create whatever you want with the application and then name the document when you save it.

For now, you'll use TeachText as a sample application—and learn how to use applications in general.

Creating a document

Now that you've started TeachText, you need to use the keyboard to create a document.

- *Different pointers:* Usually the pointer is shaped like an arrow, but it changes shape depending on what you're doing. Right now it's an **I-beam.** It changes to the I-beam pointer when it's positioned over an area where you can type text or where there's text you can edit. (Sometimes it changes to a **wristwatch** to let you know that the Macintosh is doing something that takes a little time.)

On the screen, a blinking vertical bar marks the **insertion point,** where text you type will be inserted. If you make a mistake, use the Backspace (or Delete) key to erase characters back to where the mistake is, and then start typing again.

1. **Use the keyboard to type this sample paragraph:**

   ```
   The following is my best guess for a production
   schedule.  Please keep in mind that it is subject to
   change once reality gets underway.  Let me know if I'm
   cheating anyone of the time he or she needs, or if I'm
   not allowing for black holes.
   ```

 You'll use the Macintosh keyboard mainly for typing text and numbers. The main part of the keyboard is very similar to a typewriter keyboard. Use the Shift key for capital letters.

2. **As you type, do not press the Return key when you get to the end of a line.**

 Most applications that let you enter and edit text—such as word processing applications—start the new lines for you. It's a feature called **word wrap,** so called because if a word is too long to fit at the end of one line, the word wraps around to the next line automatically.

You'll have a chance later to learn more about adding and editing text, but now you need to give the document a name and *save* it.

Naming your work and saving it on a disk

This procedure gives the document a name of its own and puts a copy of it (with that name) on the disk. It is stored there, as is, until you decide to rename it, change it, or delete it.

1. Choose Save As from the File menu.

A **dialog box** appears. When your Macintosh needs more information from you, it presents a dialog box with buttons to click, such as OK or Cancel, and may include a place for you to type additional information.

The dialog box that appears now is called a *directory dialog box*. It gives you a different view of the same directory you see in a directory window on the desktop. It also gives you several options—including the chance to save your document on any disk you choose. At this point, you'll save your document directly on the *Macintosh System Tools* disk. (For now, ignore the other options you see.)

The item of immediate interest is a text box in which you can type the name of your document. (You see the label "Save this document as:" just above it.) Because the text box is selected (highlighted), the name you type will replace "Untitled" automatically. There's no need to use the mouse to position the pointer in the text box.

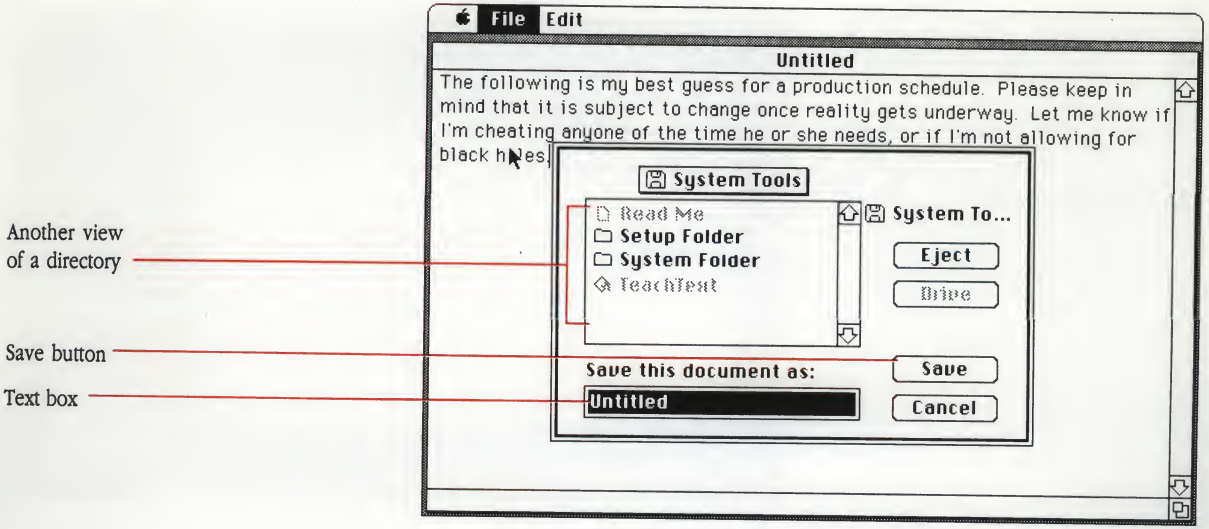


Figure 1-27
A directory dialog box

2. **Type `First Memo` in the text box.**

3. **Click the Save button.**

 Your document is saved on the disk just as it appears on the screen. After the Macintosh saves the document, the title bar shows the name you just gave it.

 - *Save early and often:* Once you've given your document a name, if you continue working on it, make a habit of choosing the Save command from the File menu about every 15 minutes or so. (It's a good thing to do while you're waiting for your next inspiration.) That way, if your Macintosh gets switched off or there's a power failure, you'll never lose more than 15 minutes' worth of work.

 With your work saved on the disk, you can quit TeachText and return to the desktop.

4. **Choose Quit from the File menu.**

 The desktop appears again. But now the icon of your new document appears in the System Tools window.

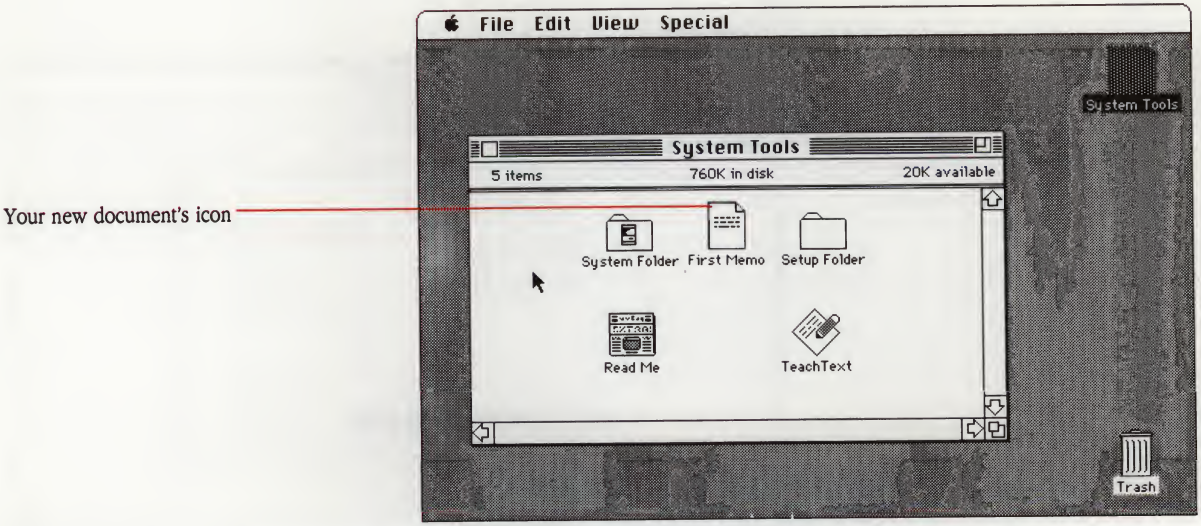


Figure 1-28
A document icon

This new icon represents the document you created, and below it is the name you gave it. When you work on this document again, you'll select and open the icon just like any other icon.



Figure 1-29
Document and application icons that resemble each other

Most documents you create will have an icon particular to the application you used to create them, so you can tell which application you used to create each of your documents.

Editing text

Now you know how to create and save a document. But suppose you need to modify it in some way? In this part of the tutorial, you'll learn how to revise a memo you've written.

1. Open the First Memo icon.

Opening the document you want to work on also starts the application you need to do the work. You don't have to open the application first and then open the document.

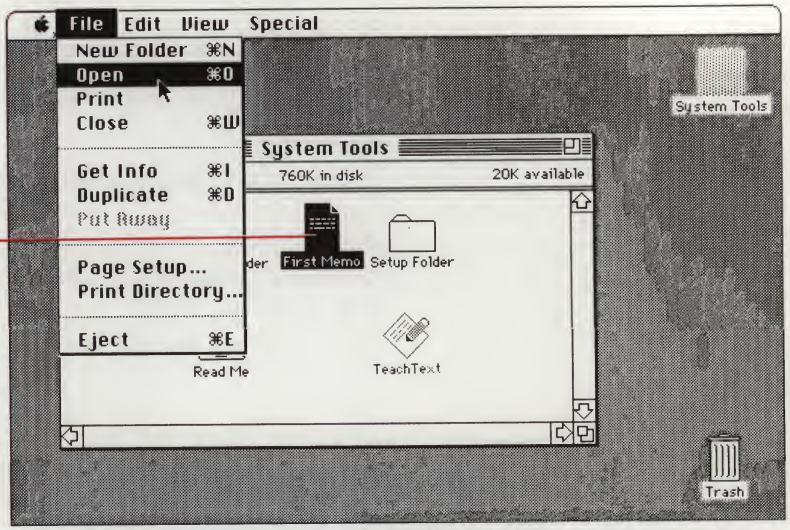


Figure 1-30
Opening an application by opening a document icon

The TeachText application starts, and the document you saved earlier reappears, just as it was when you saved it.

2. **Move the insertion point by clicking in front of the *s* in the word *subject*.**

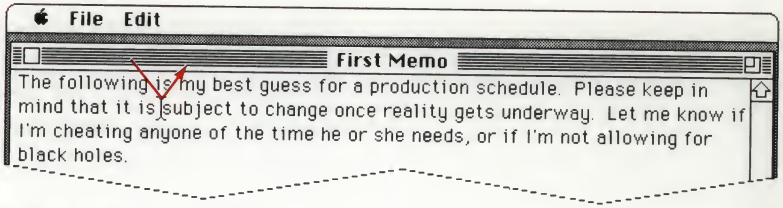


Figure 1-31
Moving the insertion point

You're moving the insertion point to where you want to add text.

3. **Type `not.`**

What you type appears at the insertion point. (Don't forget to add a space after *not*.) You probably noticed that when you added text, the words on the other lines rewrapped to accommodate the extra word.

Now you'll select some text and move it to another part of the document.

4. **Select the entire second sentence by positioning the pointer after the period that follows the word *schedule* and dragging to the end of the sentence.**

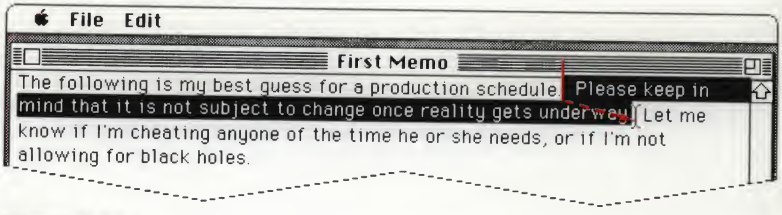


Figure 1-32
Selecting text

First drag down, and then drag to the right. (Be sure you include the period at the end of the sentence.) If you move the pointer off the sentence, you might select more than just the sentence. If this happens, just start dragging over again; nothing unexpected can happen while you're selecting text.

When you drag through text, you're selecting information to work on, as you did when you selected icons. You selected icons by clicking them; you select text by dragging across it or down through lines of text.

5. **Choose Cut from the Edit menu.**

 The sentence vanishes. Whenever you choose Cut or Copy from the Edit menu, whatever you cut or copy is put in a holding place called the **Clipboard,** ready for you to paste it to a different location if you want. (You use Copy when you want to leave the selected text where it is and put a copy of it somewhere else. Copy works just like Cut, except it leaves the text you selected in the document.)

6. **Move the insertion point by clicking after the period that follows the word *holes*.**

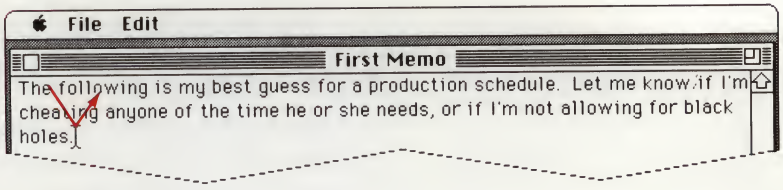


Figure 1-33
Moving the insertion point

7. **Choose Paste from the Edit menu.**

 The contents of the Clipboard—in this case, the sentence you just cut—are pasted into the location you selected.

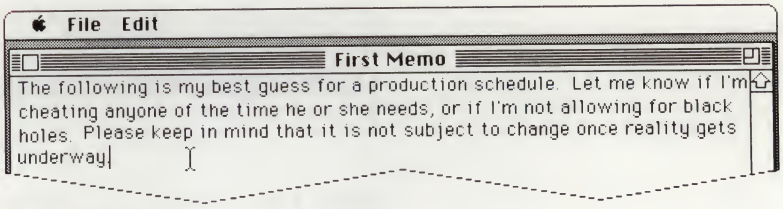


Figure 1-34
Pasting in text

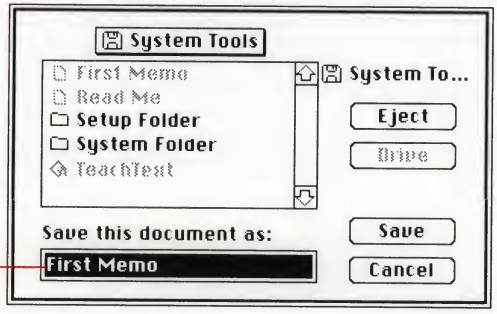
The contents stay on the Clipboard until you replace them by choosing Cut or Copy again (or shut down the computer). This means you can continue to paste them. You can paste within one document, between two documents created with the same application, or between documents created with different applications. For example, you can draw a picture with a graphics program and use it in a report you create with a word processing program.

Saving a document with a different name

Now that you've edited your original memo, you need to save your revision. When you're finished making changes to a document, you have two choices for saving. You can choose Save from the File menu, and the revised document is saved with the same name you gave the original. That's fine if you don't want to keep a separate copy of the original document. But you may want to save the revision and keep the original, too. (For example, you may have a form letter that you keep as an original; you can personalize the letter and save different versions with new names.) To do this you choose the Save As command from the File menu.

1. **Choose Save As from the File menu.**

 A directory dialog box appears. (It's the same one you saw when you named your first memo.) The name of the original document appears highlighted in the text box.



Original document's name, highlighted in text box

Figure 1-35
Save As dialog box

You can edit the names of documents just as you would other text. (Or if you prefer, you can just type a new name for the document rather than edit the old one.)

2. **Position the pointer at the beginning of the word *First* and drag to the end of the word to select it.**

3. **Type `Second`.**

 Typing over the selected text replaces it automatically.

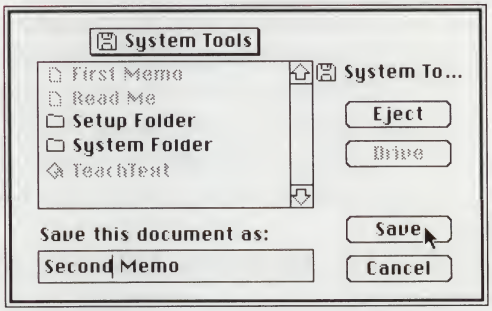
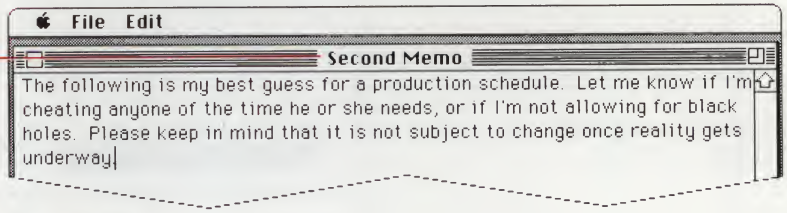


Figure 1-36
Changing a document's name

4. **Click the Save button.**

 You've saved the revised memo with a new name. Notice that the title bar has changed to show the name you just gave the revised memo. Your original document is still saved, unaltered, with its own name.



New name in title bar

Figure 1-37
Document with its new title

5. **Choose Quit from the File menu.**

 You return to the desktop, where you see both the icon for your original document and an icon for the revised memo with the name you just gave it.

What you've learned about using applications

With TeachText, you've practiced starting an application and using it to create, save, and modify documents. You've learned new skills and built on earlier skills in performing these tasks. By the end of the next (and final) section of the tutorial, you should be an accomplished Macintosh user.

Organizing documents

In this final part of the tutorial you'll practice

- creating and naming folders
- putting folders into folders (nesting)
- moving through the hierarchical file system
- opening and saving documents within the hierarchical file system
- removing documents and folders you don't need any more

You've seen how to start an application and open a document, save it, and quit the application to return to the desktop. This part of the tutorial shows you ways you can organize your documents—group them together with related documents, duplicate them, rename them, or throw them away.

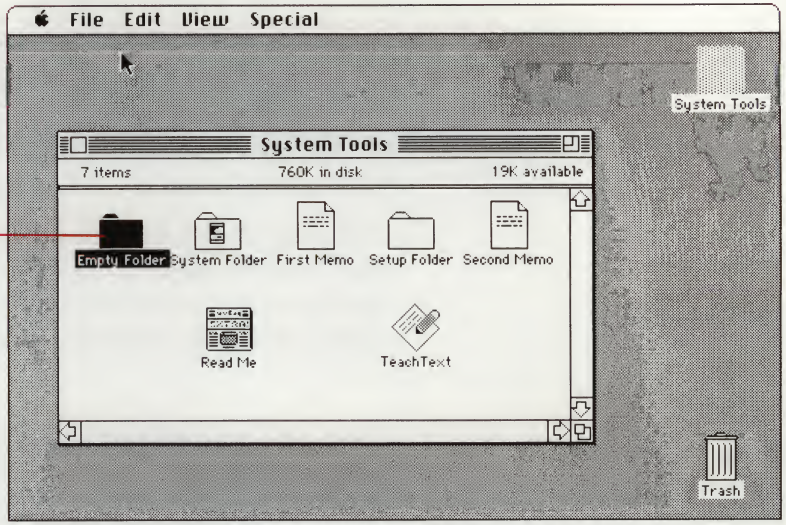
Using folders

Macintosh folders work just like ordinary file folders to help you organize your documents. For instance, you could keep all your monthly status reports together in one folder. Or group all your illustrations together, or keep each one with the report it illustrates. The Macintosh lets you organize your documents however you want them.

You've already got some folders on the *Macintosh System Tools* disk. To organize your own work, you have an endless supply of empty folders.

1. Start a new folder by choosing New Folder from the File menu.

A folder named "Empty Folder" appears in the System Tools window.



The new folder you created

Figure 1-38
A new folder

The empty folder is automatically selected when you create it, so you can rename it just by typing. (If you can't see the entire icon, you can make the window larger or move the icon.)

2. Type `Memos` and press Return.

Pressing Return confirms your new folder name. "Empty Folder" is renamed "Memos."

Usually you have to click an icon before you can type a new name. But you don't have to click newly created folders to rename them. (They're already selected for you.)

3. Drag each of the two document icons to the Memos icon, releasing the mouse button when the Memos icon is highlighted.

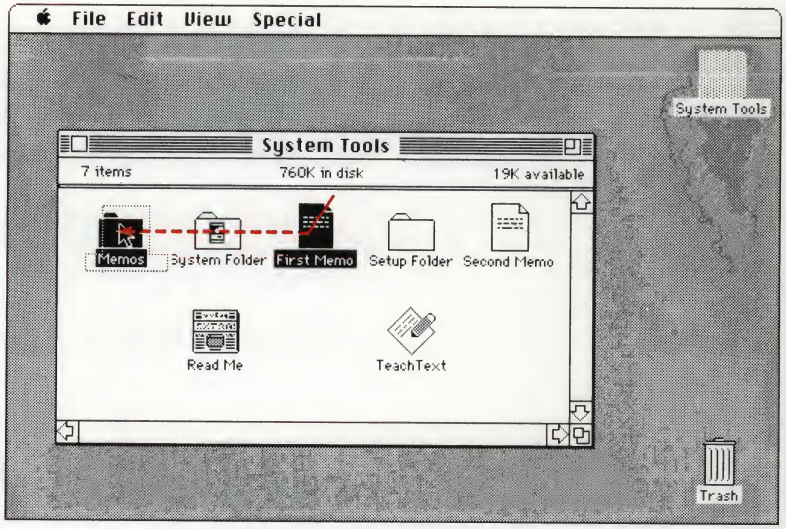


Figure 1-39
Dragging a document to a folder

When you cover the folder icon with the outline of each document icon, the folder icon is highlighted. As soon as you see the change to highlight, "drop" the document icon into the folder by releasing the mouse button. The folder icon is no longer highlighted, and your document icons disappear into the folder.

4. Open the Memos icon.

There are the icons that represent your two documents.

Icons you moved into the Memos folder

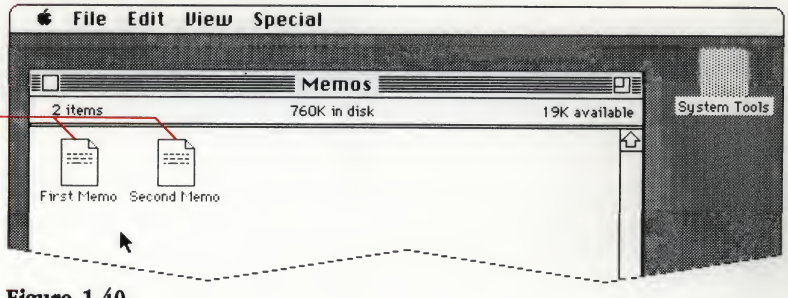


Figure 1-40
Memos folder opened

When you drag a document icon to a folder icon, you file the document there. You can also drag a document icon into an open folder window; the result is the same.

Nesting folders

Large-capacity disks—especially hard disks—can hold hundreds of documents and folders. At some point, you may find it helpful to place folders *within* other folders to keep your work organized.

1. **Close the Memos window if it's not already closed.**

 Simply click the close box.

2. **Choose New Folder from the File menu.**

 You see an "Empty Folder" in the System Tools window.

3. **Name the new folder by typing `TeachText Folder` and then pressing Return.**

4. **Put the Memos icon and the TeachText icon into the TeachText Folder.**

 Use the technique you just learned for placing documents in folders.

5. **Open the TeachText Folder.**

 You see both the TeachText application icon and the Memos icon in the TeachText Folder directory window.

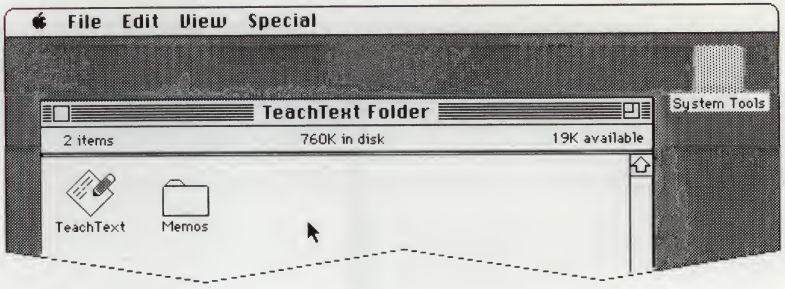


Figure 1-41
TeachText Folder opened

6. Open the Memos folder.

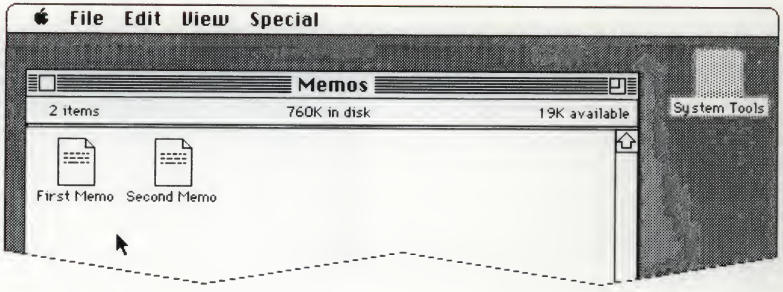


Figure 1-42
Memos folder opened

Notice that each folder has its own directory window. The active window is the folder you just opened. (But you can still change the active window by clicking anywhere in another window.)

7. Close the Memos folder and then the TeachText Folder.

As you close each folder's window, it collapses back into its icon in the previous window, until you reach the System Tools window.

Placing folders within folders is called **nesting.** You can continue nesting folders until you have about 12 levels, but most people find that retrieving documents and applications nested more than four levels deep becomes tedious.

When you nest folders, you create a hierarchy. When all of the folders on a disk are closed, and the disk's directory window is open, you're looking at the top level of the hierarchy. When you open a folder on the top level, its directory window shows you the second level of the hierarchy.

8. Open the TeachText Folder.

You see the second level.

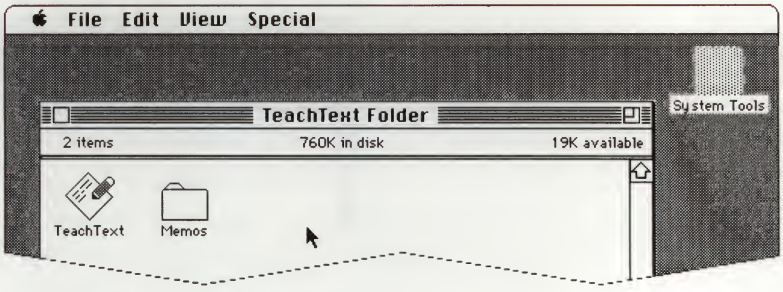


Figure 1-43
Second level of the file hierarchy

If there's a folder in that second level—in this case, Memos—when you open it, you see the third level, and so on.

9. Open Memos.

You see the third level of the hierarchy—the two memos.

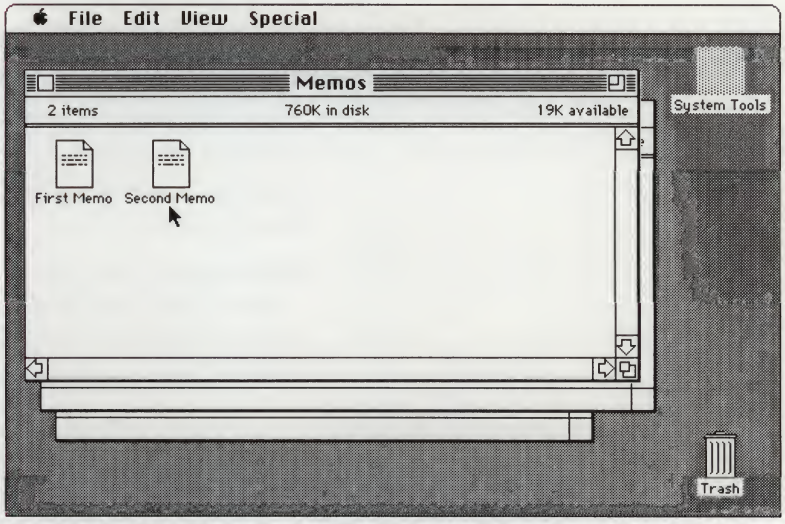


Figure 1-44
Third level of the file hierarchy

The feature of the Macintosh that lets you nest folders is called the **hierarchical file system.** (It's sometimes abbreviated *HFS.*)

Moving through the hierarchical file system within an application

When you're working with an application, moving around in the hierarchical file system would be tedious (and confusing) if you had to *quit* the application and go back and forth through all those folder windows whenever you wanted to open a new document. Fortunately, you can open documents while you're within an application. This section of the tutorial will show you how.

The first three steps are here to get you ready to use the hierarchical file system from *within* the TeachText application.

1. **Close the Memos folder to get it out of the way.**
2. **Open the TeachText icon to start the application.**
3. **Close the Untitled window.**

 Either click the close box or choose Close from the File menu.

 You don't want to create a *new* document right now. With "Untitled" closed, you can use the hierarchical file system to open one of the documents you created earlier.

4. **Choose Open from the File menu.**

 You see this directory dialog box:

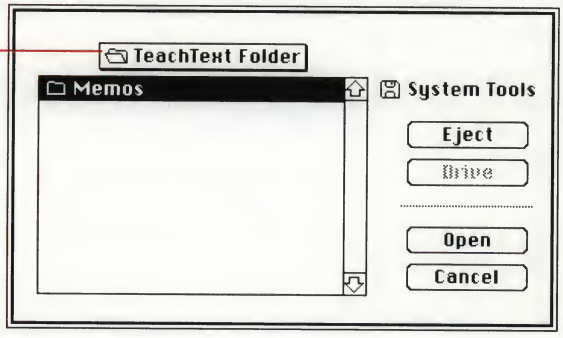


Figure 1-45
Directory dialog box for the Open command

A title shows you the name of the folder you're currently working in—TeachText Folder. The box beneath it shows you all the items in the TeachText Folder that you can open with this application—in this case, only the Memos folder.

Remember, you got to this dialog box by choosing the Open command. What you see in this dialog box is a selective view from within TeachText of items you can *open* in TeachText. Even though the TeachText Folder also contains the TeachText application, that is not something you can open from this dialog box, so its name does not appear in the list.

You can always open folders from within this dialog box.

5. To open the Memos folder, click the Open button.

Memos is already highlighted, showing that it's selected, so you can click Open without selecting Memos first. (You can also double-click the name Memos to open it.)

As you open Memos, you move down through the hierarchy. The title changes to remind you where you are in the hierarchy, and the box shows you what's on the new level you just moved to—in this case, the two documents in the Memos folder. The selected document is the one that will open when you click the Open button. If you want to open another document, click anywhere on its name to select it, and then click the Open button.

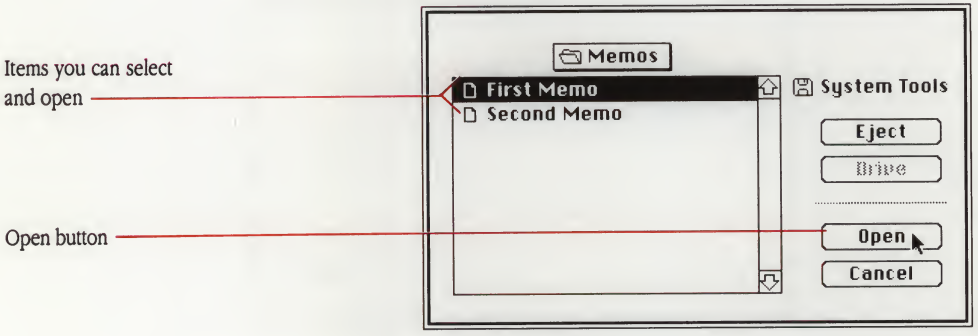


Figure 1-46
The next level in the hierarchy

If you want to open a document that's located somewhere else in the hierarchy, you can move to another level by using the pull-down list available from the title.

6. **Position the pointer on the title and press and hold down the mouse button.**

 Release the mouse button when you've seen enough.

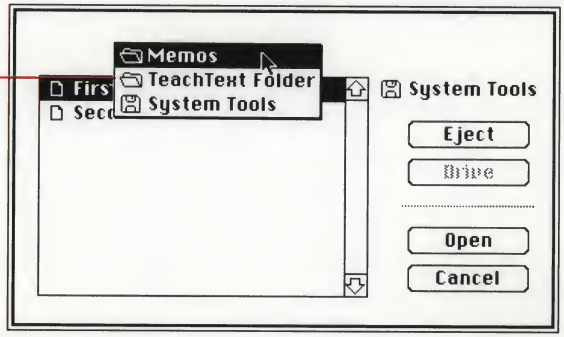


Figure 1-47
Directory hierarchy

This pull-down list is similar to the menus you used earlier, except that rather than showing commands, this list shows the path through the hierarchy back to the top level. (The top level is always the last on the list.) You choose the level you want by dragging down the list and selecting it.

7. **Now press the mouse button again and choose TeachText Folder from the list.**

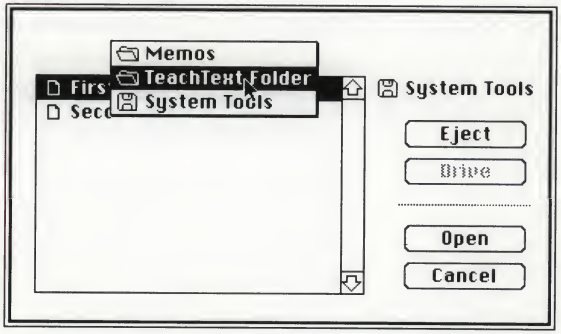


Figure 1-48
Choosing a different level in the hierarchy

The title changes again. You chose to see inside the TeachText Folder, and now you see the Memos folder, contained in the TeachText Folder.

8. **Pull down the list again and choose System Tools.**

 The list changes again, and you see the folders on the top level of the hierarchy—in this case, the System Folder, the TeachText Folder, the Setup Folder, and the Update Folder.

So far, all you've seen in the box are folders and the documents you can open with TeachText. When you open a document from within an application, the dialog box shows you only folders and documents that you can open with that application. If you open a folder and you don't see anything listed below its title, it's because that folder doesn't contain anything you can open with the application you're using.

Opening a document within an application

Now open one of the memos.

1. **Open the TeachText Folder.**

2. **Open the Memos folder.**

3. **Open either of the two memo documents.**

 The first document in the directory, First Memo, is automatically highlighted. If you want to open Second Memo, click its name, and then click Open.

❖ *So far...* To review what you've learned so far: You've seen how to use the Open command dialog box to move through different levels of the hierarchy on the *Macintosh System Tools* disk. The directory title tells you where you are in the hierarchy, and the pull-down list lets you move to different levels within it. The box beneath the directory title shows you the folders and documents on each level that you can open with the application you're using. Now you'll use a similar technique to move through the hierarchy when you save a document.

Saving a document in the hierarchical file system

1. Choose Save As from the File menu.

You don't need to make any changes to the document. Right now, you just want to save a version of the document with a different name.

You see the familiar Save As directory dialog box.

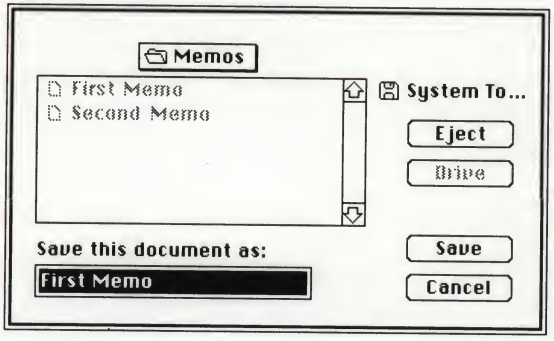


Figure 1-49
Save As directory dialog box

This time, you'll choose a different level of the hierarchy to save the document on.

2. Pull down the list and choose the TeachText Folder.

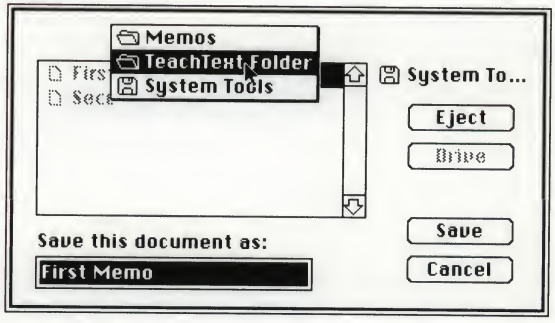


Figure 1-50
Choosing the TeachText Folder

You see the contents of the TeachText Folder—the TeachText application and the Memos folder. The directory title changes again to show you where you are in the hierarchy.

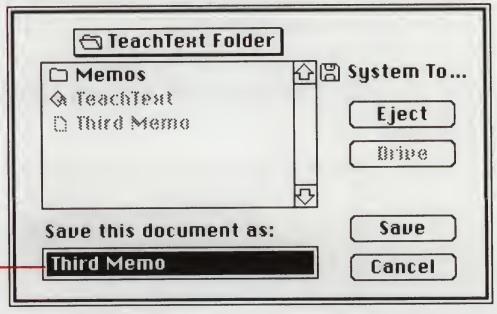
When you're *saving* a document, you see *all* the applications, folders, and documents on that level in the window. Seeing everything gives you a chance to make sure you're not saving this document with the same name as something else that's already there. That way, you won't inadvertently lose anything by using the same name. (Actually, if you choose Save As and save a document with the same name as another item in the directory, you'll get an alert message asking you to confirm that you want to replace the other document.)

3. **Type `Third Memo` in the text box.**

4. **Click the Save button.**

 You saved the new document in the TeachText Folder.

5. **Choose Save As from the File menu.**



Document with the same name already saved at this level of the hierarchy

Figure 1-51
Changing a document's name

Again, you see the directory dialog box. This time, you see the name of the document you just saved listed in the box along with the other items in the TeachText Folder. Now you have memos saved at two different levels of the hierarchy—one at the second level in the TeachText Folder, and two at the third level in the Memos folder.

6. **Type `Fourth Memo` in the text box.**

7. **Click the Save button.**

8. **Choose Quit from the File menu.**

 The Macintosh returns you to the directory window for the TeachText Folder, where you see the icons for your new memos.

Removing documents and folders

You're almost finished with this tutorial. Before you go, it will help the next person who uses this tutorial if you leave everything the way you found it.

1. **Drag the TeachText application icon from the TeachText Folder you created earlier to the System Tools directory window.**

 It will be there if you or anyone else wants to use the tutorial.

2. **Drag the Memos folder to the Trash.**

 This removes the folder and its contents (two memos).

3. **Close the TeachText Folder window and drag the folder to the Trash.**

4. **Choose Empty Trash from the Special menu.**

 The items you placed in the Trash are effectively erased.

Congratulations, you've completed the tutorial.

Starting your own work

You have practiced using most of the skills you need to put your Macintosh to work. What you do next is up to you, but here are some suggestions to get you started.

- **Does your Macintosh have a brand-new hard disk?** If your system includes a hard disk, go now to Chapter 8, "Hard Disks," to get your hard disk set up and running.
- **Do you have some application programs?** If you have applications to use on your Macintosh, you can start working with them. Be sure to read the manuals that came with them, and enjoy your Macintosh.
- **Do you plan to use application disks as startup disks?** You may want to update your application startup disks so they'll take advantage of the latest improvements in the system software on the *Macintosh System Tools* disk. To update application disks, you use a utility program called the Installer. In Chapter 9, "Startup Disks," you'll find instructions on using the Installer to do this.
- **Do you want to learn more about your Macintosh?** If you'd like to know more about how your Macintosh works, read the rest of the owner's guide that came with your computer.

CHAPTER 2

Basic Macintosh Techniques

WHO NEEDS THIS CHAPTER?

This chapter summarizes basic techniques you'll use whenever you work with your Macintosh computer—from clicking and dragging to the fundamentals of editing text. If you've already completed the tutorial in Chapter 1 or are familiar with operating the mouse, scrolling windows, moving icons where you want them, and so on, you can skip this chapter for now. Later, if you've forgotten how to perform a particular task and want a refresher, the information will be here when you need it.

What's in this chapter?

There are three topics covered in this chapter:

- using the mouse
- using windows
- editing text

Using the mouse

You can do all your work on the computer (except type text and numbers) with these mouse techniques:

- *click,* to select an item or make it active (including the variations *double-click,* to select and open icons quickly, and *Shift-click,* to select two or more icons when they're not grouped)
- *press,* to cause a continuous action with an item you've selected
- *drag,* to move an item you've selected (including dragging to select a contiguous group of icons or a block of text)

Selection

Every time you press the mouse button, you make a *selection,* an important part of communicating with your Macintosh. It's your way of telling the computer what you want to work on before you tell it what you want it to do. Here's an example: You select a folder named Memos, the computer highlights it to acknowledge your action, you choose the Open command, and the computer opens the folder. It's the equivalent of your saying, "The Memos folder is the one I want opened." Your actions tell the Macintosh what to do.

Clicking

1. **Position the pointer on what you want to select or make active.**
2. **Press and quickly release the mouse button.**

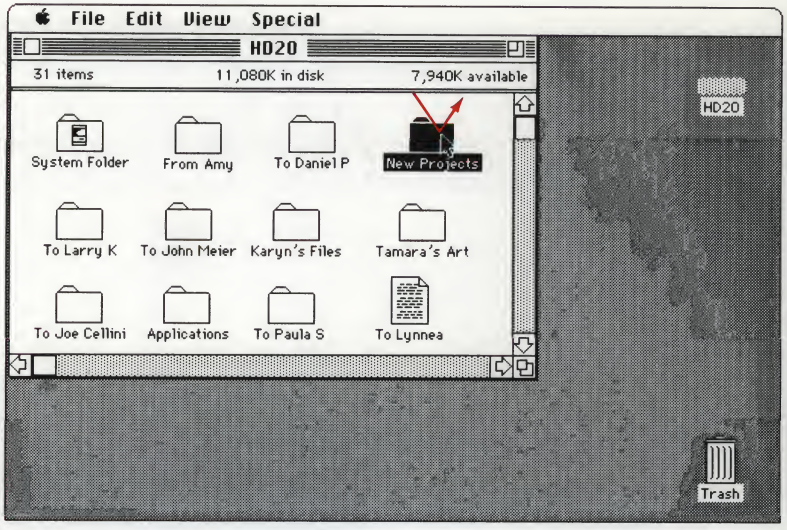


Figure 2-1
Clicking

Whenever instructions tell you to *click*, this is the action you should take.

Double-clicking

1. **Position the pointer on an icon.**

 You can choose a document, a folder, or an application that you want to open.

2. **Press and release the mouse button twice in quick succession.**

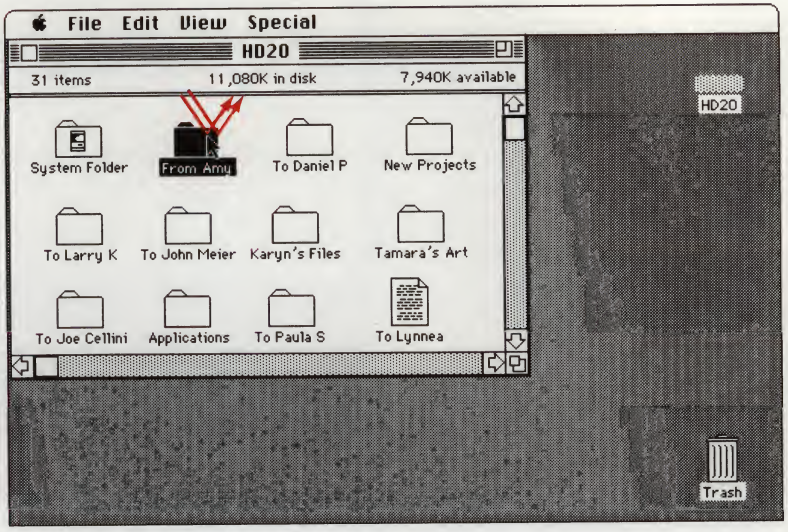


Figure 2-2
Double-clicking

Double-clicking is a handy way to open a folder, application, or document. Of course you can always open an icon by selecting it and choosing Open from the File menu, but many Macintosh users find that double-clicking is quicker.

Another handy use of double-clicking is to select a word in text. For example, if you want to delete a word from the middle of a sentence, double-click the word to select it. Then press the Backspace (or Delete) key.

If you try double-clicking and aren't getting the expected results, you may be clicking faster or slower than the computer is set to accommodate. Use the Control Panel to adjust the speed to suit your personal style. (If you don't know how to use the Control Panel to change the double-click speed, see "Using the Mouse Control Panel" in Chapter 5.)

Shift-clicking

Shift-clicking is a technique you can use when you want to select icons that are scattered in different places. To select several icons that are neatly grouped together, you can use a different technique. See "Selecting Grouped Icons by Dragging," later in this chapter.

1. **Select something by clicking.**

2. **Hold down the Shift key while you continue to select (or deselect) by clicking individual icons.**

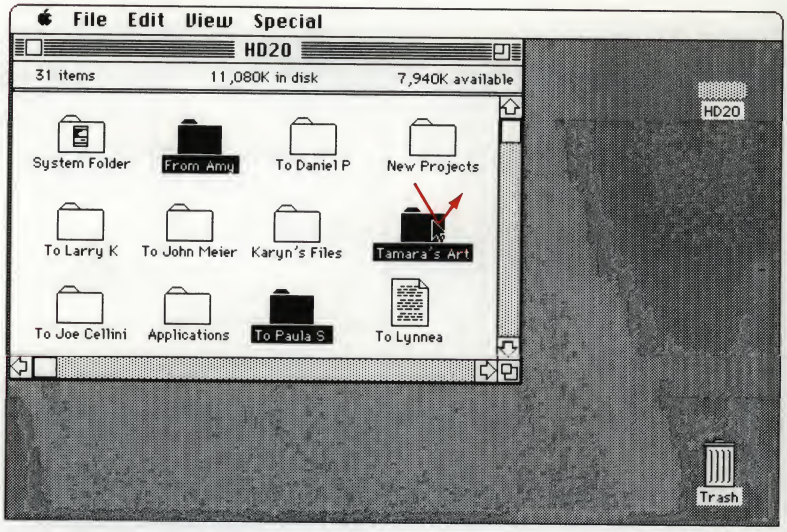


Figure 2-3
Shift-clicking to select random icons as a group

As long as you hold down the Shift key, each icon you click will be added to the selected group. If you change your mind about including a selected icon, you can Shift-click to deselect it.

Pressing

1. **Position the pointer on a menu title, a scroll arrow, or wherever you want the action to happen.**

2. **Without moving the mouse, press and hold down the mouse button.**

 As long as you hold down the mouse button, the effects of pressing continue. Pressing on scroll arrows results in continuous scrolling. Pressing on a menu title pulls down the menu and keeps it down until you release the mouse button.

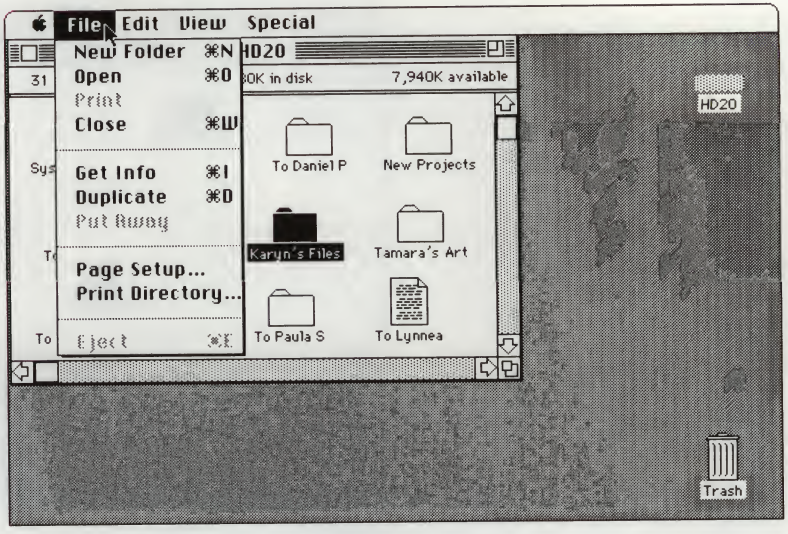


Figure 2-4
Pressing

Dragging

1. **Position the pointer on an icon.**

2. **Press and hold down the mouse button, and move the mouse.**

 As soon as you press the mouse button, the icon will be highlighted (showing that it's been selected). Then, when you move the mouse, an outline of the icon moves along with the pointer.

3. **Release the mouse button.**

 When you release the mouse button, the icon you selected moves to the new location and replaces the outline.

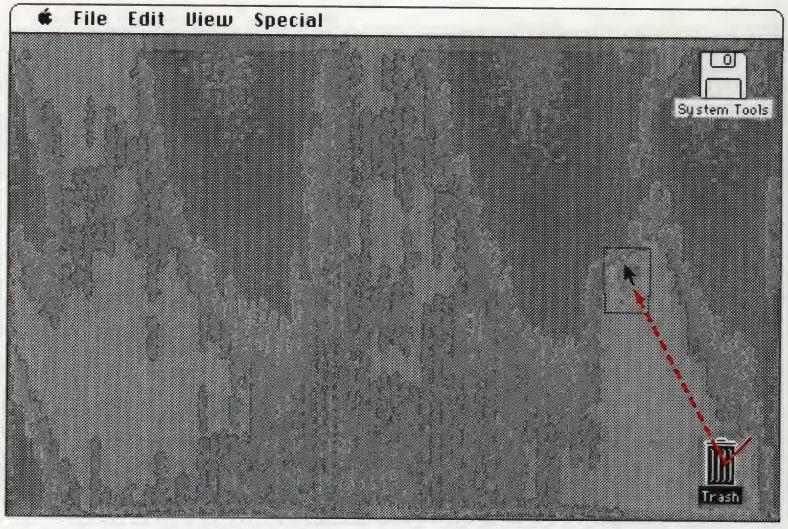


Figure 2-5
Dragging

To cancel dragging

1. **Before releasing the mouse button, move the pointer back to where you started dragging.**

 You can also cancel dragging by moving the pointer into the menu bar.

 You can cancel dragging in a menu by moving the pointer off the menu.

2. **Release the mouse button.**

Selecting grouped icons by dragging

When you want to select icons that are grouped together, you can do it by dragging diagonally to enclose them all in a selection box.

1. **Position the pointer above and to the left of the group you want to select.**

 Make sure the pointer is not actually touching any icon.

2. **Press and hold down the mouse button while you drag diagonally, down and to the right.**

 The outline of a box will appear, enclosing the icons you want to select. (If you have selected only one icon, the pointer was too close to that icon. Click in a clear space to deselect that icon, then try again.)

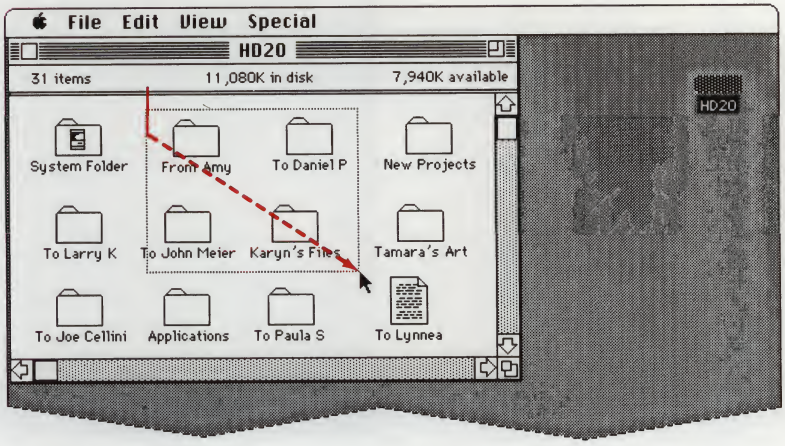


Figure 2-6
Dragging diagonally to select icons as a group

3. Release the mouse button.

As soon as you release the mouse button, the icons will be highlighted to show that they are selected. Now, any action you perform on one of them will happen to all of them. For example, you can drag the whole group to the Trash or to a different folder.

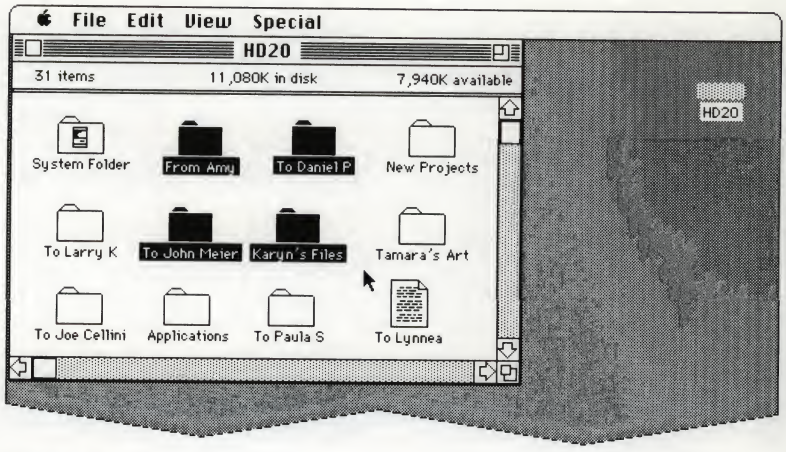


Figure 2-7
Icons selected as a group

You can select a group of icons only if they're all in the same window or all on the desktop. If you want to work on a number of documents from different folders or disks, drag them to the desktop and select them all there.

Operations on a group of icons are usually performed one by one—printing a group of documents, for example.

Using windows

A window frames its contents. The contents can be a directory of a disk or folder, a desk accessory, or a document you create with an application. Most windows can be moved, changed in size, scrolled, and closed. Windows can also overlap each other.

You can have multiple windows on your desktop so you can view more than one set of information at the same time. When more than one window is open, all the action happens in the frontmost window. Clicking anywhere in an inactive window brings it to the front and makes it active.

An active window always has a title bar and may also have

- a size box
- a zoom box
- a close box
- scroll bars

Although a window might be "buried" behind others, it cannot be dragged completely off the desktop or made so small that you can't see it.

Windows might behave a little differently within an application. See each application's manual for an explanation of how windows work in that application.

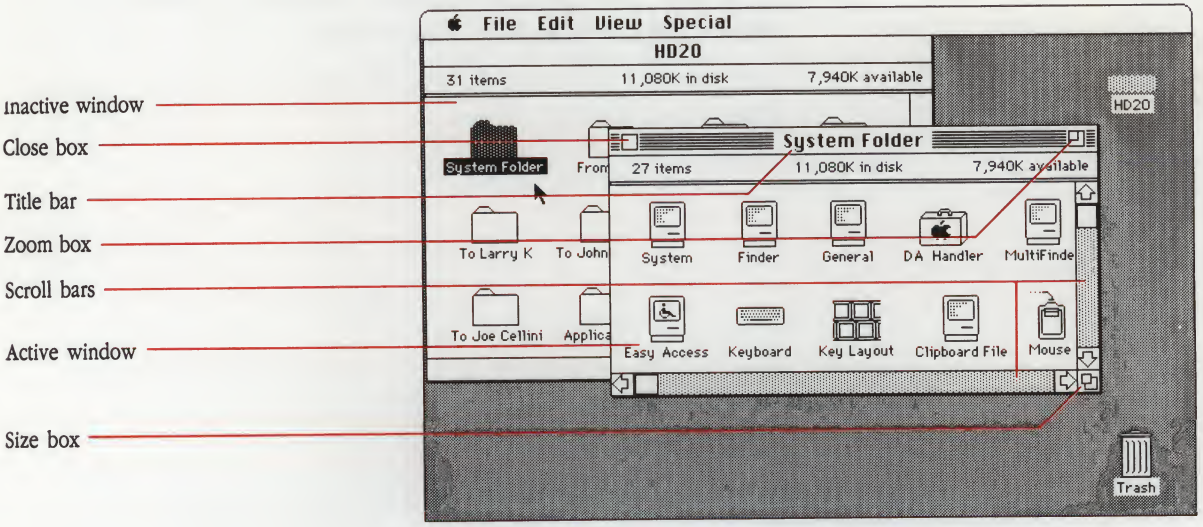


Figure 2-8
Windows

Activating a window

1. **Find an inactive window (one without horizontal lines in its title bar).**
2. **Click anywhere in the window.**

Activating a window brings it to the front, where it can overlap or completely cover other windows. To see covered windows, move the active window or resize it to make it smaller.

Moving a window

1. **Position the pointer anywhere in the title bar of the window except on the close box or zoom box (if either is showing).**
2. **Press and hold down the mouse button.**

 The window becomes the active window (if it's not already). To move a window without activating it, hold down the Command key before you press the mouse button.
3. **Drag the window to a new location.**

 You can't drag a window completely off the desktop.

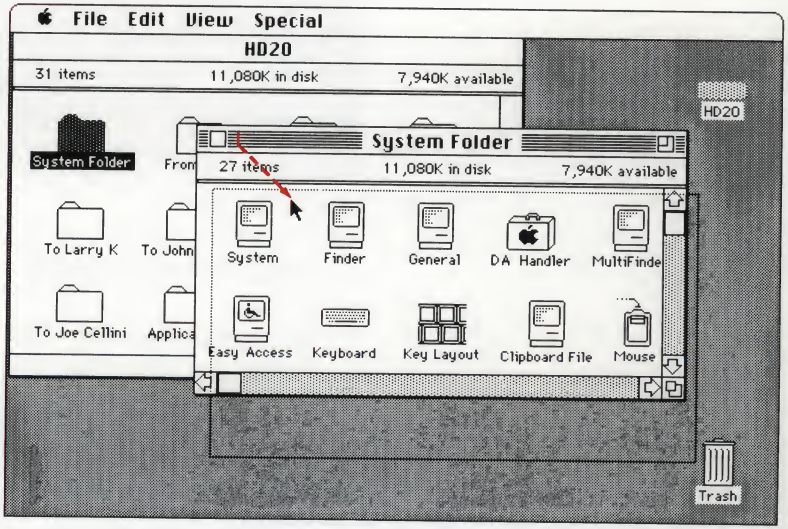


Figure 2-9
Dragging a window

To cancel the move, move the pointer into the menu bar.

Resizing a window

1. **Activate the window by clicking in it.**

2. **To use the size box, move the window if necessary so that the size box in the bottom-right corner is visible.**

3. **Drag the size box.**

 Dragging horizontally changes the width, dragging vertically changes the height, and dragging diagonally changes both.

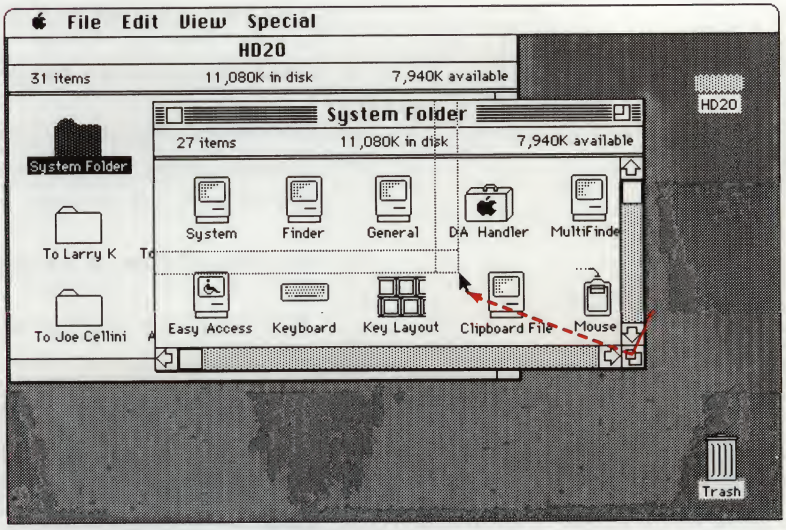


Figure 2-10
Using the size box

4. **Release the mouse button.**

 The new dimensions take effect only when you release the mouse button.

Zooming a window

1. **To enlarge a window that's small, click the zoom box in the top-right corner of the title bar.**

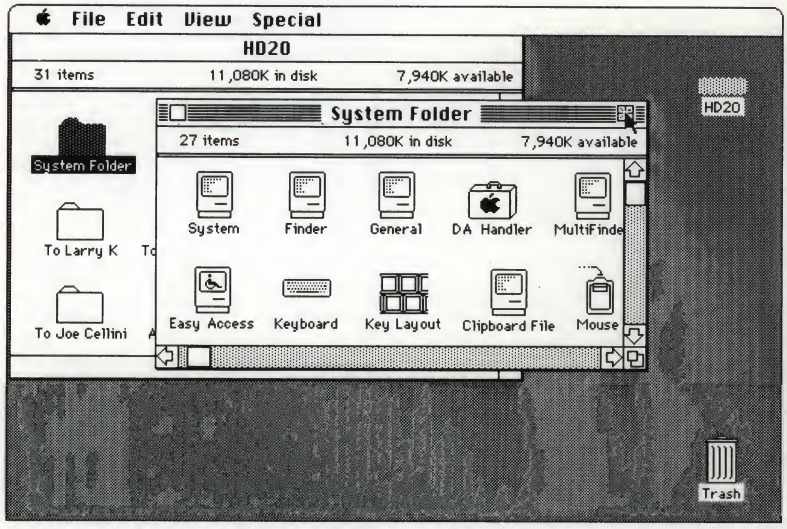


Figure 2-11
Using the zoom box to enlarge a window

2. **To shrink the window back to its original (smaller) size, click the zoom box again.**

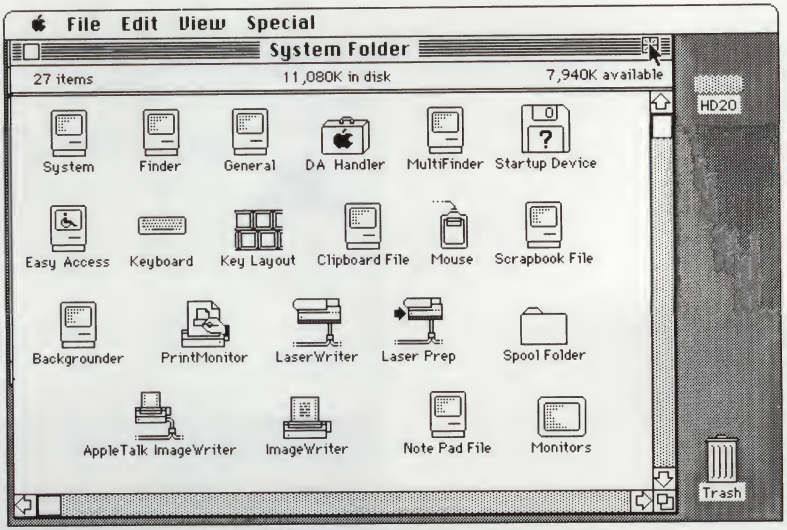


Figure 2-12
Using the zoom box to shrink a window

Some windows don't have a zoom box. However, if they have a size box, you can still change the size to suit you.

Closing a window

1. **Activate the window by clicking anywhere inside it.**
2. **Choose Close from the File menu, or click the close box on the left side of the title bar.**

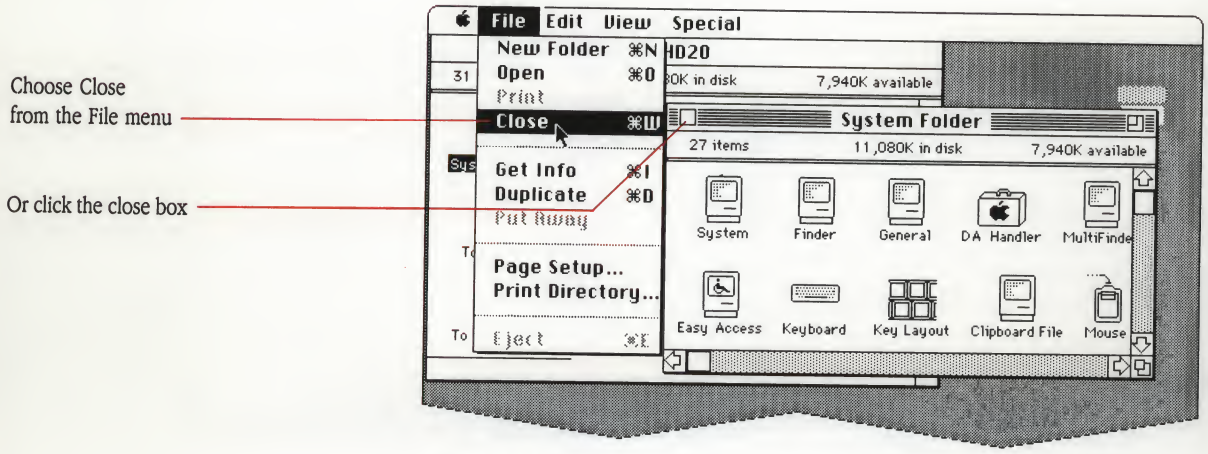


Figure 2-13
Closing a window

Some windows don't have a close box. When that's the case, you can usually close the window by clicking anywhere inside it. If an application doesn't have a close box or a Close command, read that application's manual to find out how to close its window.

Scrolling a window

Scroll bars let you see more of what's in a window. When a scroll bar is gray, it means that there is material not shown in the immediate window area. (That is, the contents of a directory window or application window are partly hidden from view outside the edges of the window.) A gray scroll bar is active, and you can use it to bring material into the window where you can see it.

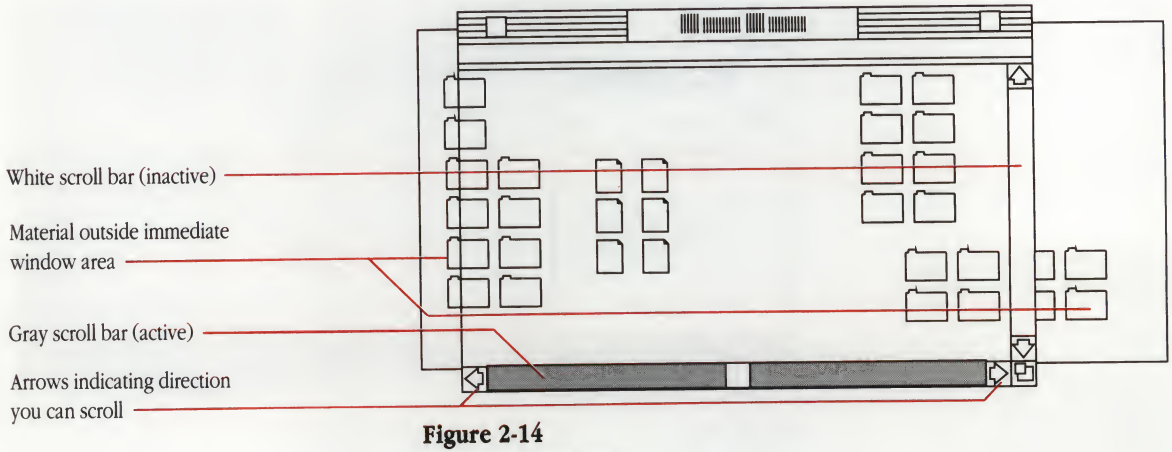


Figure 2-14
How scroll bars work

Most windows have both vertical scroll bars to let you scroll up and down and horizontal scroll bars for scrolling from side to side. Scroll bars are not always gray (active). One or both of the bars can be white. A white scroll bar is inactive because scrolling would not show you anything you can't already see in the window.

You can use the scroll bars in different ways, depending on how far you need to scroll to find what you want to see.

To scroll line by line

1. **Determine whether you want to see the area preceding (up arrow) or following (down arrow) the part of the document you're looking at now.**

2. **Click the arrow that points in the direction of what you want to see.**

 In a word processing (or spreadsheet) application, each click scrolls the document one line. In a graphics application the document may not have "lines," as such. In this case, each click scrolls the document one unit of space equivalent to a line.

 If you press the scroll arrow, you can scroll continuously.

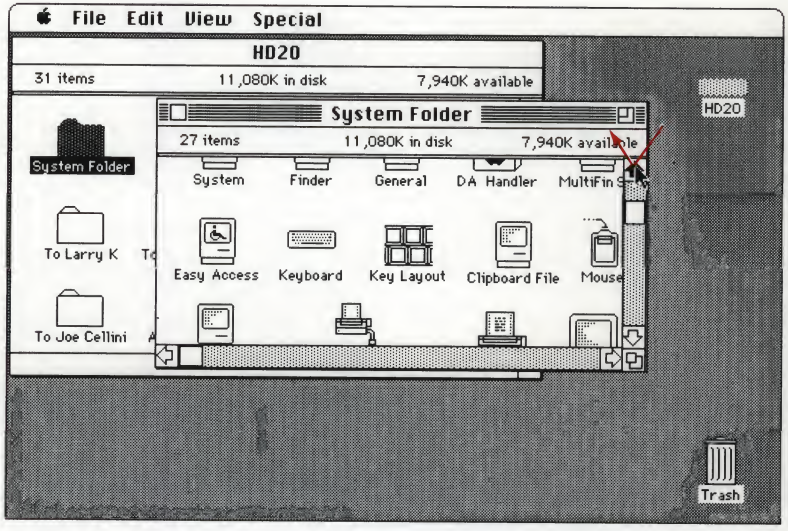


Figure 2-15
Scrolling line by line

To scroll by the windowful

1. **Note the position of the small white box in the gray scroll bar.**

 If the scroll box is at the very top or bottom of the scroll bar, you can scroll in only one direction. If the gray area shows above and below the box, you can scroll in either direction.

2. **Click in the gray area of the scroll bar.**

 If you press in the gray area of the scroll bar, you can scroll continuously by the windowful.

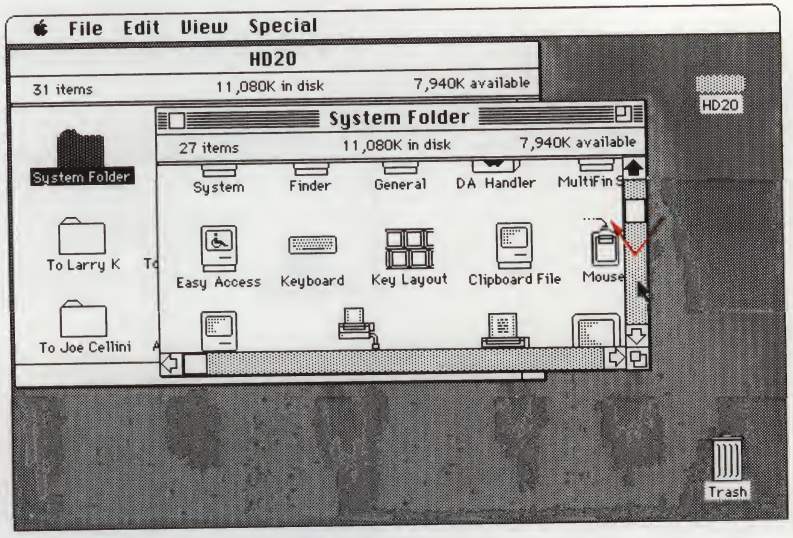


Figure 2-16
Scrolling by the windowful

To scroll quickly to any part of a directory or document

1. **Determine what part of the directory or document you want to see.**

 The vertical scroll bar represents the length of the directory or document. (The horizontal scroll bar represents the width.)

2. **Drag the scroll box to a place in the scroll bar that represents that approximate position.**

 For example, if you want to go to about the middle of a directory or document, drag the scroll box to the middle of the vertical scroll bar.

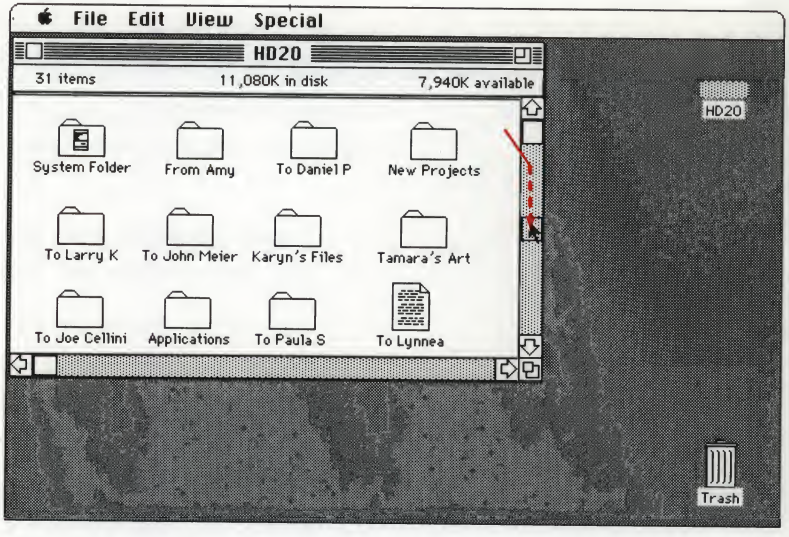


Figure 2-17
Scrolling quickly

Some applications show the document's page numbers in the vertical scroll box.

Editing text

Editing text involves the same basic operations whether you are renaming an icon, reversing the order of two sentences, or revising an entire novel. In its simplest form, editing involves selecting the text you want to work on and making the necessary changes. For most editing, you use both the mouse and the keyboard—and, of course, the Edit menu.

In the Finder, you can enter and edit

- the names of icons—disks, folders, applications, and documents
- text in desk accessories such as the Scrapbook and Note Pad
- text in the comment box of information windows (which you open by choosing Get Info from the File menu)

See each application's manual for more on how to enter and edit text in that application. Also see "Menu Command Shortcuts," near the end of Chapter 6.

Inserting text

1. **Use the mouse to move the I-beam pointer to the place where you want to insert text, and then click.**

 The blinking vertical insertion point appears where you clicked. (You can also use the arrow keys to move the insertion point.)

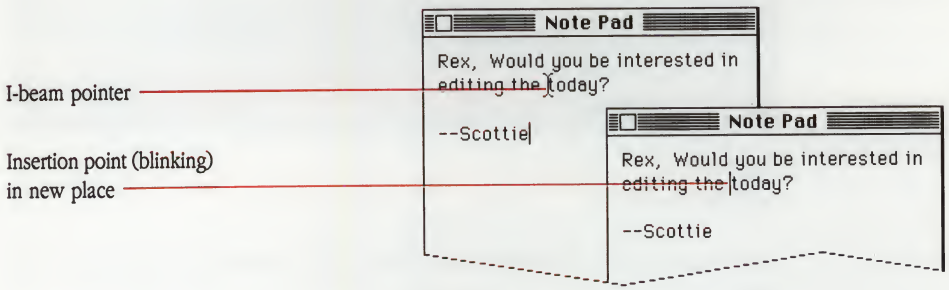


Figure 2-18
Placing the insertion point

When there's no existing text (in certain dialog boxes, for example), the insertion point may already be at the proper place.

You can control the rate at which the insertion point blinks (slow, medium, or fast). To find out how, see "Using the General Control Panel" in Chapter 5.

2. **Type to add text at the insertion point.**

Selecting text

1. **Use the mouse to move the I-beam pointer to the beginning of the text you want to select, and then press the mouse button.**
2. **Drag across the text (diagonally if there's more than one line) to the end of the text you want to select.**
3. **Release the mouse button.**

 You can now edit the selected text using the commands in the Edit menu.

 You can also select a single word by double-clicking that word.

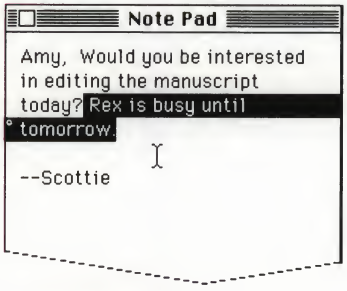


Figure 2-19
Selecting text

Moving text

Moving text amounts to picking up a word here, or a sentence there, and placing the text in a new position. The ease with which you can do this is one of the great advantages of using a computer for word processing instead of a pencil or a typewriter. The commands you use to move text are Cut, Copy, and Paste. How you use them depends on what you want to do.

To cut and paste

When you want to remove text from one location and paste it into a different place, you use the Cut and Paste commands.

1. **Select the text by dragging across it.**

2. **Choose Cut from the Edit menu.**

 The text you selected disappears from the screen. It moves to the Clipboard, where it is safely stored until you use the Cut command again, use the Copy command, or turn off your Macintosh, erasing the Clipboard's contents.

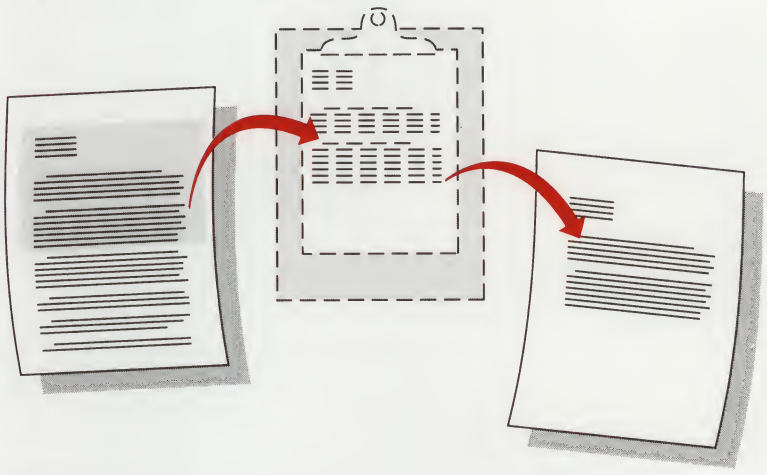


Figure 2-20
Cutting and pasting text

3. **Move the insertion point to the place where you want the text to go.**

4. **Choose Paste from the Edit menu.**

 A copy of the text moves from the Clipboard and appears in its new location. The text also remains on the Clipboard until it's replaced by something else (or you turn off the computer). As long as the text is on the Clipboard, you can continue pasting it into different places.

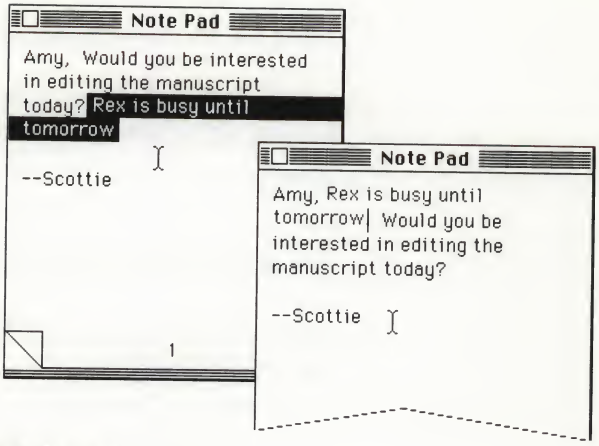


Figure 2-21
Pasting text

To copy and paste

When you want to leave some text in its present location and move a copy of it to a different location, you use the Copy and Paste commands. This is handy when you have a special paragraph or warning that you want to repeat in different memos, for example.

1. **Select the text by dragging across it.**

2. **Choose Copy from the Edit menu.**

 The text you selected will not disappear from the screen. A copy of it moves to the Clipboard, where it is safely stored until you use the Copy command again or turn off your Macintosh.

3. **Move the insertion point to the place where you want the copied text to go.**

4. **Choose Paste from the Edit menu.**

 A copy of the text moves from the Clipboard and appears in its new location. The text also remains on the Clipboard until it's replaced by something else (or you turn off the computer). As long as the text is on the Clipboard, you can continue pasting it into different places.

❖ *Scrapbook:* The Scrapbook desk accessory can play a part in copying and pasting text and graphics. To find out how, see Chapter 5, "Desk Accessories."

Replacing text

1. **Select the text by dragging across it.**
2. **Type what you want to replace the text with, or choose Paste from the Edit menu to replace the text with what was last cut or copied.**

Removing text

1. **Select the text by dragging across it.**
2. **Press the Backspace (or Delete) key, or choose Cut or Clear from the Edit menu.**

 If you really want to remove the text (rather than move it somewhere else), the Backspace (or Delete) key is the fastest way to do it.

Using the Backspace (or Delete) key does *not* affect the contents of the Clipboard.

TeachText and Read Me documents

TeachText is an uncomplicated application that lets you write, read, and edit your own text documents. If you went through the tutorial in Chapter 1, you opened TeachText and learned some basics about its use.

TeachText also provides a means for Apple Computer and other software developers to make sure that the information you get about a new product is as up-to-date as possible. When you see a Read Me document on your screen, it contains last-minute information that couldn't be included in the manual. (It's a lot quicker to create a document on a disk than it is to produce an insert for a book!) You use TeachText to gain access to this Read Me information.



Figure 2-22
Read Me document

The TeachText application is on the *Macintosh System Tools* disk, along with a Read Me document. There are two ways to get to TeachText documents you want to read:

- Open the TeachText application (by selecting its icon and choosing Open from the File menu, or by double-clicking on the TeachText icon). The first window you see will be empty and will say *Untitled* in the title bar. Close the window (by clicking the close box or by choosing Close from the File menu). Then choose Open from the File menu, and a dialog box will appear with the names of folders and documents (including the Read Me document) you can read in TeachText. Select and open the document you want to read. (You can also use TeachText to read text-only documents you've created in your favorite word processor.)
- In the Finder, open the Read Me document by selecting its icon and choosing Open from the File menu, or by double-clicking the icon. The TeachText application will start automatically.

You can print any document that appears in the TeachText window, but you will not be able to change any part of a Read Me document.

When you are using TeachText to write your own documents, you can use all the normal editing functions of the program. You can cut or copy from TeachText to the Clipboard, and you can paste what you put on the Clipboard. However, you will not be able to open up the Clipboard to see what's on it.

If you want to try using TeachText to write or edit something, see the tutorial in Chapter 1.

CHAPTER 3

Working With the Finder Desktop

WHO NEEDS THIS CHAPTER?

If you are not yet familiar with the features of the Finder desktop, this chapter provides explanations of some important concepts and step-by-step procedures to help you perform common desktop tasks.

Two other chapters in this book also describe the Finder. Chapter 4, "Finder Menu Commands," provides a summary of all the commands available from the Finder menu bar. Chapter 10, "MultiFinder," tells you how to use the Finder in a multitasking environment.

What's in this chapter?

This chapter summarizes how to use the Finder to manage what's on your desktop—the documents, folders, applications, and disks, all represented by icons. You'll learn how to open, copy, move, discard, rename, lock, or just rearrange them.

The desktop and the Finder

The term **desktop** is a metaphor for the area you see on your screen when you turn on your Macintosh—the menu bar at the top, a gray work area, assorted icons representing folders, documents, and applications, and the Trash. The desktop is your base of operations, the place where you can organize what you want to keep, where you want to keep it, what you want to work with, what you want to duplicate or rename, and what you want to discard. The desktop is created and maintained by a system application called the **Finder.**

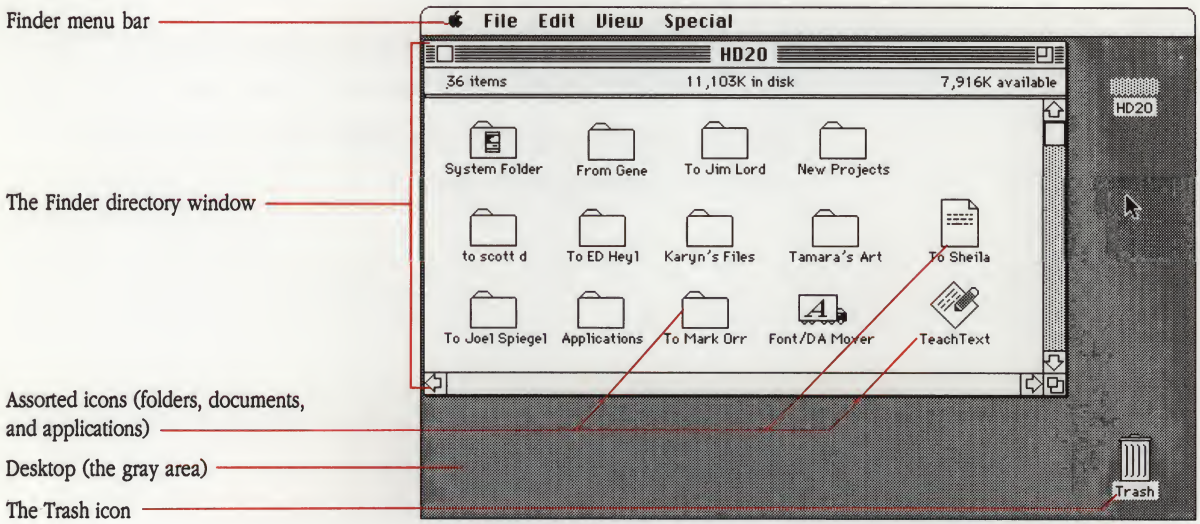


Figure 3-1
A typical desktop

You often see the name Finder in this and other Macintosh manuals. Yet some people get confused and frustrated when they look at their desktop and can't find something called Finder. In fact, you can see an icon representing the Finder in your System Folder. You can't open the icon the way you can open other applications, but the Finder is opened automatically every time you turn on your Macintosh. It is what makes it possible for you to click an icon, open an application, or drag a document to the Trash.

❖ *Choosing different startup applications:* If you want, you can elect to have an application other than the Finder start first when you turn on the Macintosh. For details see "The Special Menu" in Chapter 4 and "The Set Startup Command" in Chapter 10.

What the Finder manages

Common Finder tasks include

- organizing documents, applications, and folders on the desktop, in folders, and on disks
- opening, closing, copying, moving, renaming, and discarding documents, folders, applications, and disks
- ejecting disks
- initializing and erasing disks
- write-protecting documents
- getting information about your documents, folders, and applications with the Get Info command from the File menu
- turning off or restarting your computer

You work in the Finder by selecting and dragging icons, by double-clicking, and by choosing commands from menus in the Finder menu bar. (For additional information on using these menus, see Chapter 4.)

Who controls the Finder?

You do. The Finder is with you everywhere on the desktop, and is also present behind the scenes, keeping track of all your folders and documents and coordinating activities between you and your disks. Just as other applications let you create and manipulate words, pictures, or numbers, the Finder is designed to let you manipulate your documents, folders, and disks. The Finder does what you tell it to—sometimes on the desktop where you can see what's going on, and other times invisibly, without interrupting your work to inform you or demand attention.

Working with icons

On the desktop, you have four types of icons: disks, documents, folders, and applications. Working with these icons is a basic part of performing tasks on your Macintosh.

Renaming an icon

Every icon has a name. Application icons are identified by the name of the application. You name disks when you initialize them. You name documents when you save them for the first time (some applications ask you to name a document as soon as you create it). You usually name folders when you create them. You can change an icon's name at any time, and the Finder will keep track of the changes.

You can rename a document, folder, application, or disk whenever its icon is visible in the Finder. (You may need to insert the disk that contains what you want to rename, open the disk icon and any folders you need to, and scroll until you see the icon.)

- *Exceptions:* Some icons, such as the System and Finder files, cannot be renamed. (Their names are important to system operation.) If you click one of these icons, the pointer doesn't change into an I-beam.

 Documents or applications that have been locked cannot be renamed. (You use the Get Info command from the File menu to lock and unlock these files. See "Locking a Document or Application," later in this chapter.)

 A locked 3.5-inch disk cannot be renamed. (See "Protecting the Contents of 3.5-Inch Disks" in Chapter 7.)

When you rename a disk, write its name on the disk label. That way, if the computer asks you to insert a specific disk, you'll be able to identify the one it needs.

1. **Select the icon you want to rename.**

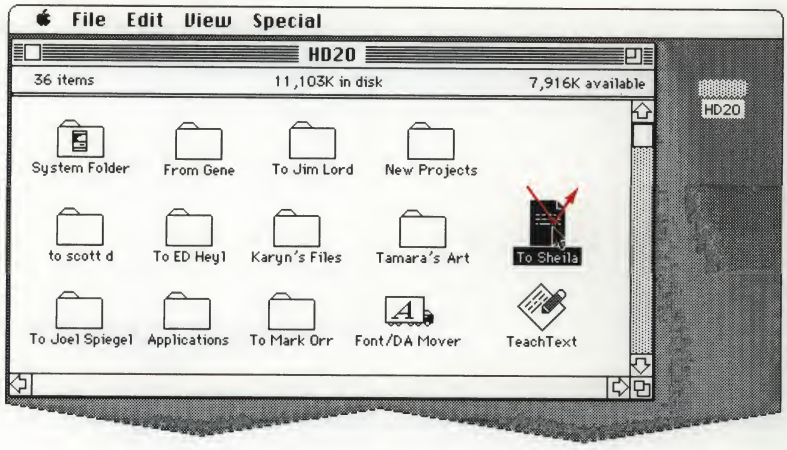


Figure 3-2
Selecting a document icon to rename

2. **If necessary, click to place the insertion point where you want it.**

 If you want to replace the name entirely, it's already selected. Skip to step 3.

 If you want to add to the name, position the I-beam pointer and click to set the insertion point.

 If you want to delete or replace part of the name, you must drag the pointer to select the text, even when the icon is already selected.

3. **Type the new name.**

 The selected text (the old name) is replaced by the new text you type.

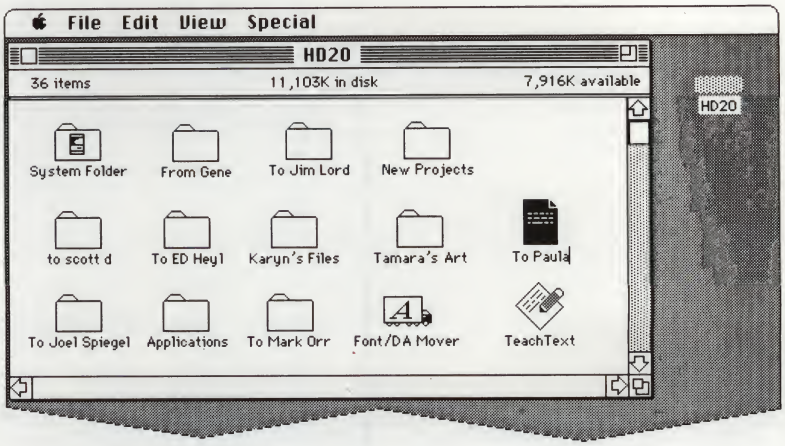


Figure 3-3
Renaming a document icon

You cannot give the same name to two icons in the same folder or disk directory. If you try, you'll see an alert message informing you that it can't be done.

Use names that help you identify the contents (the more specific, the better). Document and folder names can be up to 31 characters, and disk names can be up to 27 characters. You can use any character on the keyboard except the colon (:), but you should not start a name with a period. You can use uppercase or lowercase letters and put spaces between words.

4. **If necessary, use the Edit menu to edit the text.**

 See "Editing Text" in Chapter 2.

Another way to rename documents

When you are working on a document within an application, you can usually use the Save As command to create a copy of the document with a new name before saving it. See "Using the Save As Command," later in this chapter.

Duplicating documents, folders, or applications

If you can see the icon of a document, folder, or application, you can use the Finder to copy it. You might do this to make a backup copy. (See also "Making Copies of 3.5-Inch Disks" in Chapter 7.) Or you might want to make a copy of a document to work on without altering the original. For example, you might do this to create forms, letterheads, or templates.

1. **Select the icon that represents the document, folder, or application you want to copy.**

 If necessary, insert the disk or disks that contain what you want to copy, open the disk icon and any folders you need to, and scroll until you see the icon. See "Shift-Clicking" or "Selecting Grouped Icons by Dragging" in Chapter 2 for help in selecting more than one icon to duplicate.

2. **Choose Duplicate from the File menu.**

 A new icon appears. The duplicate icon has the same name as the original, preceded by the words *Copy of*. You can drag the duplicate copy to any folder or disk icon (or a directory window).

3. **Rename the duplicate.**

 You can rename any duplicate copy of a document or folder by typing immediately after you create the copy. Any other time, you must click the icon that represents what you're renaming before you type the new name. See "Renaming an Icon" earlier in this chapter.

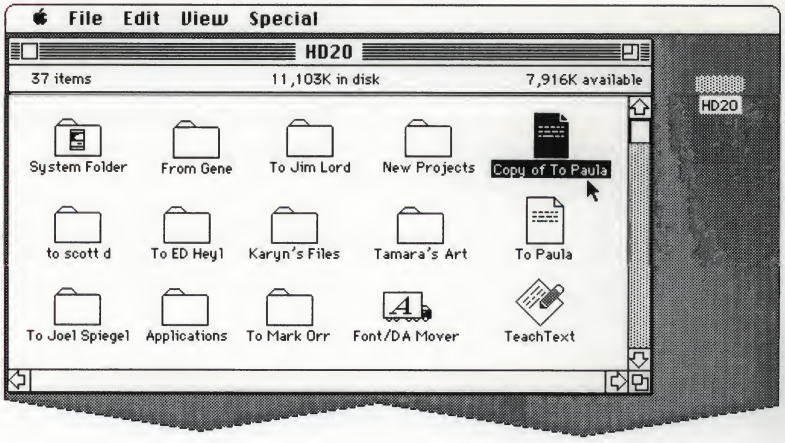


Figure 3-4
Copying an icon

Moving a document, folder, or application to a new place on the same disk

1. **Position the pointer on the icon you want to move.**
2. **Drag the icon to wherever you want to put it.**

At its most basic, dragging an icon from one place to another moves that icon to the new place. However, there are some variations in the results you achieve:

- If you drag the icon for a document, folder, or application to any place (except the Trash) on the same disk, you move the icon to the new place.
- If you drag the icon for a document, folder, or application to the Trash, you remove the document, the folder and its contents, or the application. (In the case of an application, you'll see an alert message asking you to confirm the fact that you want to discard it. If the document or application is locked, you will see an alert message telling you that the item cannot be removed. For more information, see "Locking a Document or Application" and "Using the Trash," later in this chapter.)

Copying a document, folder, or application to a different disk

You can copy a document, folder, or application from one disk to another whenever both disk icons are present on the desktop. The disk that contains the icon you want to copy is called the *source disk*. The disk where you want the copy to go is called the *destination disk*.

1. **If necessary, insert the destination disk (so its icon will be present on the desktop).**

 You must be able to see either the icon or the directory window for the icon.

2. **If necessary, insert the source disk that contains what you want to copy.**

 If you're using a one-drive system, use the Eject command in the File menu to eject the destination disk before you insert the source disk. (The Eject command leaves a dimmed icon behind on the desktop.)

3. **Open the source disk icon and any folders you need to, and scroll until you see the icon that represents what you want to copy.**

The source disk must be opened into a directory window so you can select the document, folder, or application you want to copy; the destination disk can be either in icon form or opened into a directory window.

See "Shift-Clicking" or "Selecting Grouped Icons by Dragging" in Chapter 2 for help in selecting more than one icon to copy.

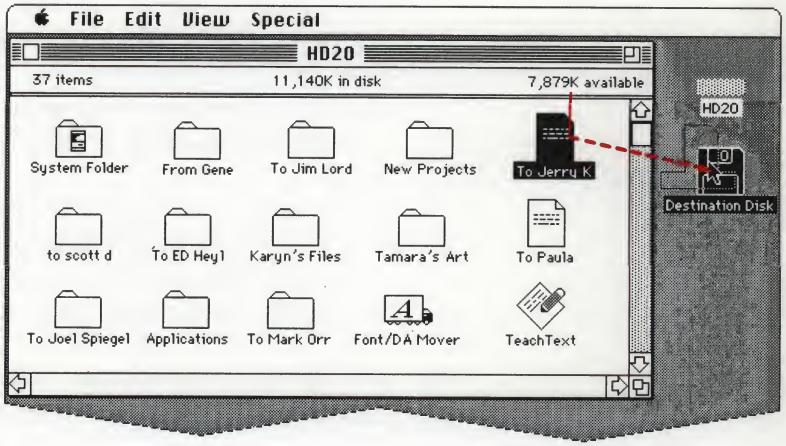


Figure 3-5
Copying to a different disk

4. **Drag what you want to copy to its destination.**

You can drag it to a disk or folder directory window, or to an icon (even a dimmed icon) that represents the disk or folder you want the item to be in.

If you drag to an open directory window, you can place the icon wherever you want. If you drag to an icon, the Finder places the item in the next available spot.

If you're using a one-drive system, the computer will present a series of dialog boxes, asking you to insert alternately the source disk and the destination disk.

5. **If necessary, confirm that you want to replace an item with the same name already on the destination disk.**

 If the destination disk already contains an item with the same name, you'll be asked to confirm that you want to replace the current contents with what you're copying. If you click OK, you'll replace what was there. (By the way, if the item is a folder, you will replace the original folder and all of its contents with the one you dragged from the source disk.)

 The copy appears in the directory window you dragged to. (If you dragged to a disk or folder icon, the copy will appear in the directory window when you open the icon.)

6. **If you don't want to keep the original on the source disk, drag the original to the Trash.**

 Whenever you drag from one disk to another, a copy of what you move is left behind for safekeeping. If you want to reclaim the space on the original disk, you can drag the original icon to the Trash and choose Empty Trash from the Special menu.

To make a copy of a document while using an application, see "Working With Documents and Applications " later in this chapter.

Getting information about icons

When you want to know the version number of an application, the size of a document, or the date an item was created, use the Get Info command from the File menu. You can also use the Get Info command when you need to lock a document or application (to prevent it from being renamed or thrown away).

- *MultiFinder and the information window:* With MultiFinder turned on, the Get Info command serves an additional purpose. You can use the information window that appears to change the amount of memory set aside for an application to use. This kind of change is not trivial, and you should be familiar with its implications. For details, see "Some Technical Points About Memory" in Chapter 10.

Using the Get Info command

1. **Select the icon of the document or application for which you want the information.**

 You can select a group of icons. The Get Info command will act for all of the selected icons.

2. **Choose Get Info from the File menu.**

 An information window like this one appears for each icon you selected in step 1. (If you selected several icons, only one of the Get Info windows will be active. You can move, activate, and close these windows just as you do any windows on the desktop.)

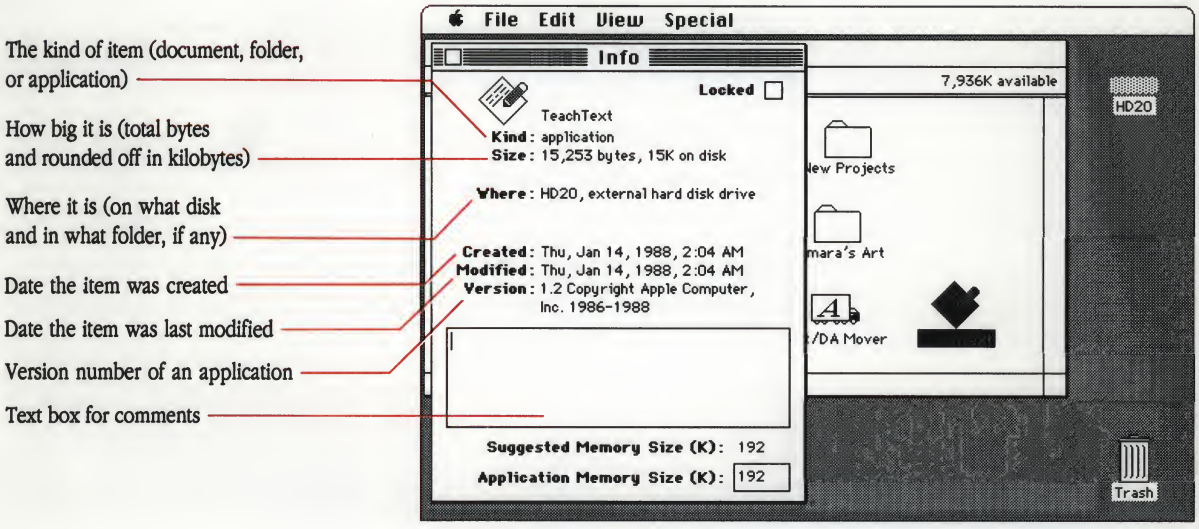


Figure 3-6
An information window

If you are looking at an information window for an application and have MultiFinder turned on, you will see additional information below the text box. For an explanation, see Chapter 10, "MultiFinder."

Locking a document or application

Locking a document or application prevents it from being renamed or thrown away. Locking a document also prevents saving any changes to it. You can, however, open and print locked documents.

See "Locking a 3.5-Inch Disk" in Chapter 7 to learn how to lock disks physically.

1. **Select the icon for the document or application you want to lock.**

2. **Choose Get Info from the File menu.**

 The information window appears.

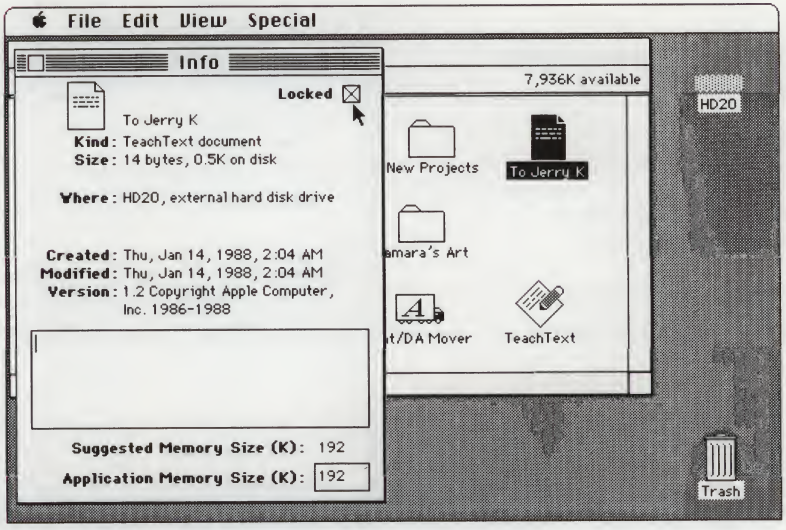


Figure 3-7
Locking a document

3. **Click Locked.**

 The Locked box is checked.

 Directories in text views indicate which of your documents and applications are locked by displaying a small padlock (to the right of the document's name).

Unlocking a document or application

1. **Select the icon for the document or application you want to unlock.**
2. **Choose Get Info from the File menu.**

 The information window appears.
3. **Click the checked Locked box.**

 The document or application is now unlocked.

Working with folders, directories, and the hierarchical file system

When you work with your Macintosh to write memos, create spreadsheets, and design graphic presentations, you are using applications and creating and saving documents. As you continue to work, the number of documents (and probably the number of applications) you have will grow. Sooner or later you'll have to arrange these items in logical groups—or run out of space on the desktop.

Folders

How you organize your work on the desktop is up to you, but the basic tool the Macintosh provides is the familiar file folder. You can create folders, name them to suit your needs, and even nest folders inside other folders to create as many as 12 levels.

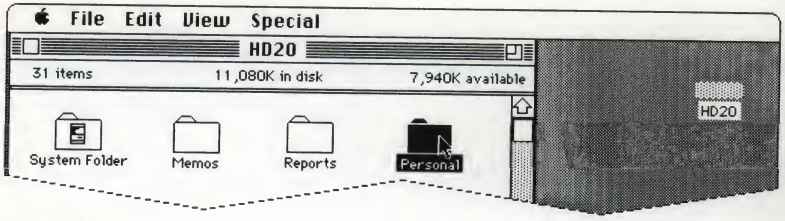


Figure 3-8
Macintosh folders

With folders, you can create a hierarchy of files, applications, and documents so you can arrange your work however you want and find what you need quickly.

Directories

One really useful feature of folders on the Macintosh is the way that the Finder helps you keep track of what's in them—using **directories.** The Finder creates a directory automatically for each folder you produce, and instantly updates the directory with every change you make to any folder's contents.

No matter how many folders you have, each one has its own directory. You can see the contents of any folder by opening its icon into a directory window (just as you can with a disk icon).

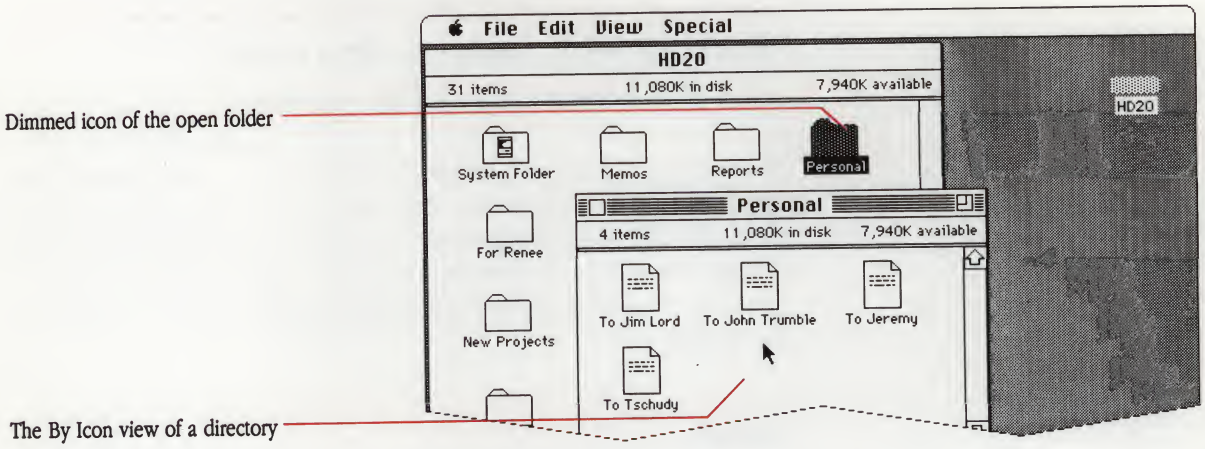


Figure 3-9
Open folder showing its directory window

Like a telephone book, a directory window contains information about the items located in its folder. But a Macintosh directory window offers added flexibility that you won't find in your phone book: you can choose to change your view of each folder's contents to focus on what *you* want to know. It's as if your phone book offered the option of listing people in your community by address or by the date their phone was installed.

You can see the contents of a folder listed

- by icon (large or small)
- by name (in alphabetical order)
- by the date each item was last modified (most recent first)
- by the size of each item (largest first)
- by the type of item (documents first, applications second, and folders third, with each group in alphabetical order)
- by color (available only on a Macintosh II with a color monitor)

Choosing a different view from the View menu instantly rearranges the *active* directory window in the view you choose. For example, you can quickly see which document is taking up the most space or which is the latest version of a report you're preparing.

No matter how you choose to view a specific directory, you can still perform all the usual tasks. Every item in a directory is represented by an icon, no matter what arrangement you have the directory in. In any of the text views (by name, date, size, or type) the icon is very small and appears to the left of its name. You can click, double-click, drag, or Shift-click this icon just as you would its counterpart in an icon view of the directory.

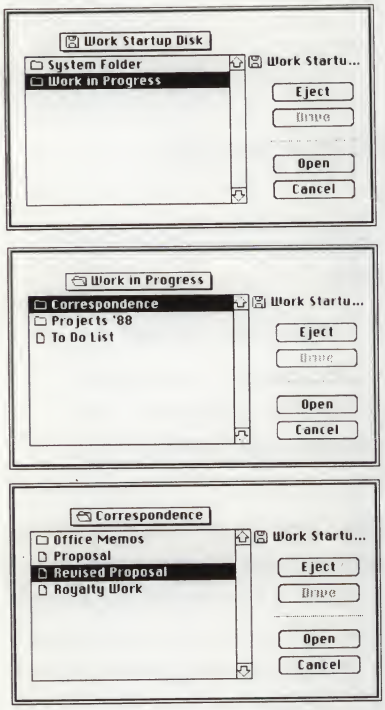
The view you choose for the contents of one window has no effect on other windows.

For more information, see "The View Menu" in Chapter 4.

The hierarchical file system

Folders let you arrange your applications and documents in a hierarchy. When you open a disk and see a folder (or file) in the disk's directory window, you're looking at the top level of the hierarchy. When you open that folder, you see another window that shows you what's inside—probably more files and folders. Now you're looking at the second level of the hierarchy. If when you open one of the folders on this second level you see yet another folder, that folder will open onto the third level—and so on.

You can **nest** files (that is, place files and folders within other folders within other folders, and so on) until you have about 12 levels. Most people, however, find that retrieving a file nested more than four levels deep becomes tedious.



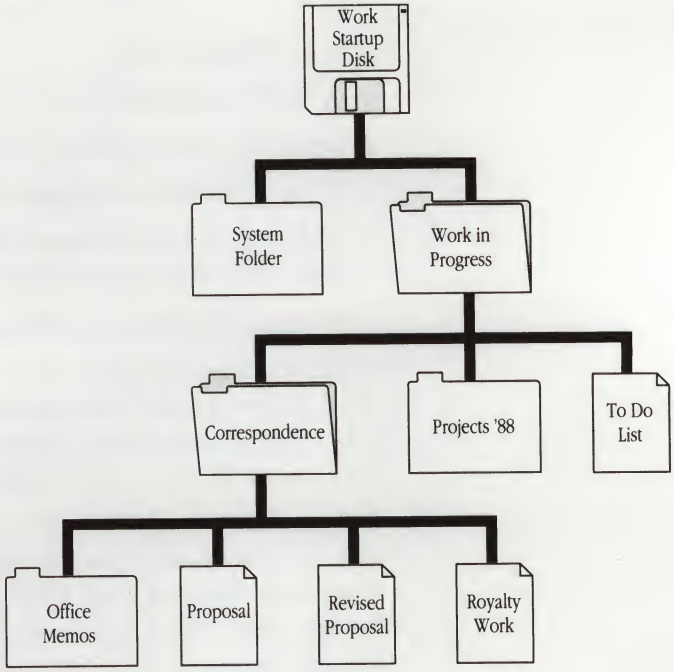


Figure 3-10
Hierarchical file structure

Luckily, you don't have to worry about misplacing a file, even a deeply nested one. If you know its name, you can find any file or folder by using the Find File desk accessory. See the *Macintosh Utilities User's Guide* for information on installing and using Find File.

Creating a new folder

1. **Choose New Folder from the File menu.**

 A folder named *Empty Folder* appears in the active window.

2. **Type an appropriate name for the folder you just created.**

Moving a document, folder, or application from one folder to another

1. **Drag the item you want to move from the folder it's in to the folder icon (or window) you want to move it to.**

 If the destination folder is on a different disk, the item is copied, rather than moved, to the new folder.

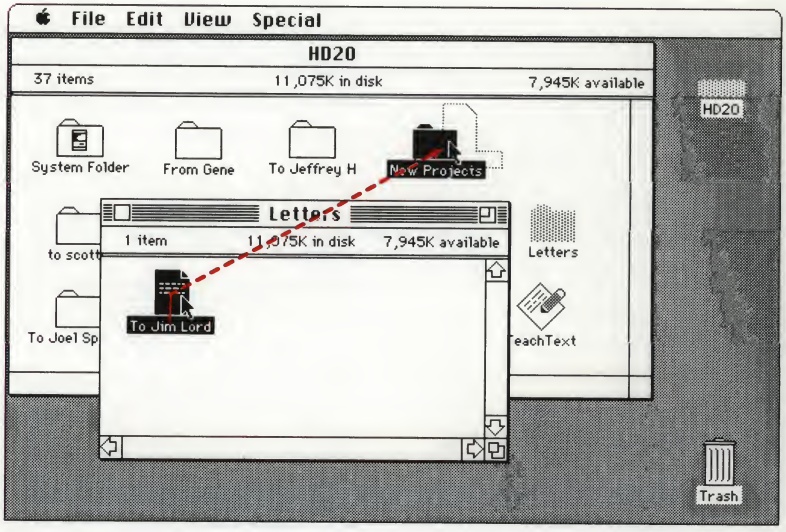


Figure 3-11
Moving a document between folders

2. **If the destination folder already contains an item with the same name, an alert box will appear, asking you whether you want to replace the existing item.**

 If you want to replace the item in the destination folder, click OK.

 You can keep documents (or folders) with the same name on the same disk, as long as they're in different folders.

 ❖ *Caution:* If the items with the same name are folders, clicking OK replaces the existing folder—and its *contents*—with the folder you dragged to this destination. This happens whether or not the folders' contents include duplicate names.

 If you don't want to replace the item with the same name, click Cancel. Rename one of the "twin" items. Then you can safely drag the item to the destination folder.

Working with documents and applications

Documents are the products of the work you do with your Macintosh. Every memo you type or spreadsheet you create becomes a document as soon as you save it, and its icon identifies it in the Finder.

Usually, creating a document is something you do with an application. This manual does not attempt to tell you how that application works or how to use it, but there are some general procedures that apply for all documents and applications.

You can do quite a lot of document management without leaving the application you're using. You can create documents, open them, close them, save them, print them, and—in some applications—delete them. And you can organize your work using the same folders you create in the Finder.

Creating a document by opening an application

When you open most applications, the first window you see is named *Untitled*. This window is effectively a blank slate where you can create whatever you want, and as soon as you save it, it becomes a document.

1. **Select the icon for the application you want to use.**

 If necessary, insert the disk that contains that application, open the disk icon and any folders you need to, and scroll until you see the application icon.

2. **Choose Open from the File menu.**

 You can also double-click the icon to open the application.

 The appropriate application starts. Usually a new, untitled document appears.

3. **Enter text, graphics, statistics, and so on (depending on the nature of the application).**

4. **Save the document and give it a name.**

 You've created a document.

Creating a document with the New command in an application

These instructions assume you've already opened an application and have been working on a document. Now you want to close that document and start a new one.

1. **Choose Close from the File menu to close the current document.**

 If there are any unsaved changes, the application will alert you and offer the option of saving the changes before closing the document.

 With some applications, you can have several documents open at a time. In other words, it isn't always necessary to close one document before you can open another.

2. **Choose New from the application's File menu.**

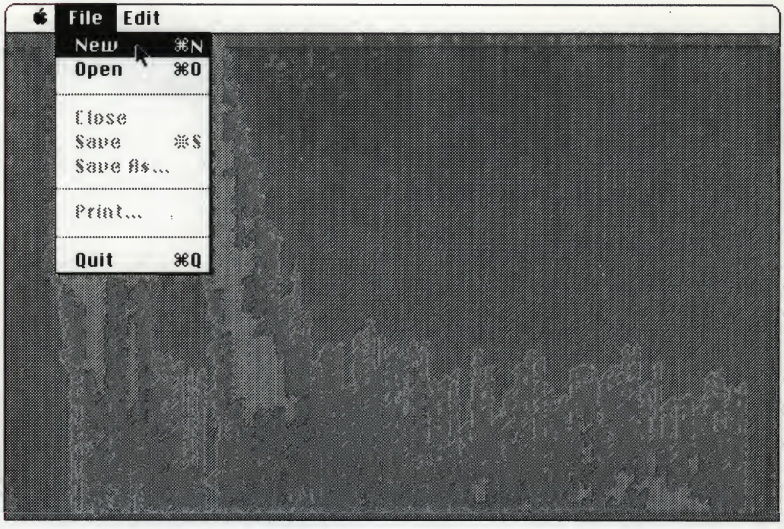


Figure 3-12
Creating a new document

A new document appears. In most applications, you name the document the first time you save it; in a few applications, you must name the document as soon as you create it.

Opening an existing document from the Finder

You can open an existing document by selecting and opening the icon that represents the document you want to work on. The application you'll use with that document starts automatically.

1. **Select the icon that represents the document you want to work on.**

 If necessary, insert the disk or disks that contain that document and the application you used to create it, open the disk icon and any folders you need to, and scroll until you can see the document icon.

2. **Choose Open from the File menu.**

 You can also double-click the icon to open it.

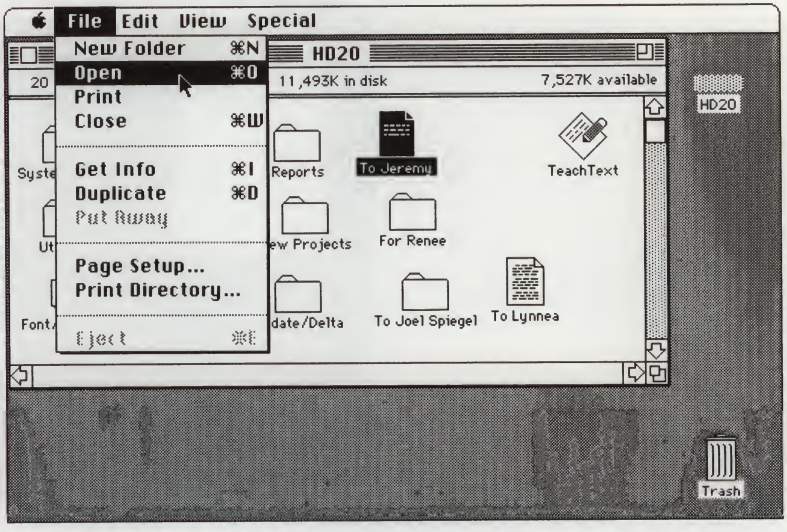


Figure 3-13
Opening a document from the Finder

Directory dialog boxes

The hierarchical file system can be especially helpful when you're working within an application. Whenever you choose Open or Save As from the File menu within an application, or save a document for the first time using the Save command, you see the same hierarchy of folders you created in the Finder (as long as the disk is initialized appropriately—explained in "Preparing 3.5-Inch Disks for Use" in Chapter 7).

A dialog box appears containing a directory of the current folder or disk. The directory title (and a folder or disk icon) is above the alphabetized list of the directory's contents; the name of the current disk (and a disk icon) appears to the right.

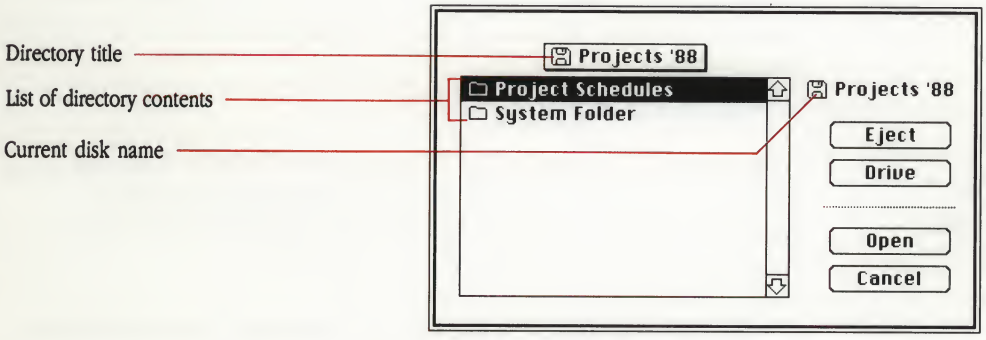


Figure 3-14
Directory dialog box

The folders in this dialog box correspond to the ones you create in the Finder, with one notable difference: these folders show only the documents the current application can open, even when the corresponding folders in the Finder contain other documents or applications.

You open these folders in the same way you open folders in the Finder—by selecting them and clicking the Open button, or by double-clicking them. You can also use the scroll bar (or drag the mouse) to move up and down the list of names until you find what you want to select and open.

You can move through the entire hierarchy of folders in this way, opening folders within the currently open folder, until you reach the document you want to open.

- *A shortcut when you know what you want:* If you know the name of a document or folder in the current directory and want to select it quickly, type the character or characters you want to find. As you type each character, the system highlights any documents or folders that "qualify." For example, as you type M, the selection bar moves to the first name beginning with *M* in the list. As soon as you type a second letter, the system will find the first name that begins with both letters, and so on.

 However, if you are hesitant and pause too long while typing, the next character you type is considered a new request rather than a continuation of the old. (The Delay Until Repeat setting in the Keyboard Control Panel controls how long the pause can be before subsequent typing begins a new request.)

When you choose Open or Save As, the first directory you see is for the folder (or disk, if you're at the top level) that you last opened a document from or saved a document to. You can move up or down the hierarchy to open or save documents.

Opening an existing document from within an application

These instructions assume you have already opened the application, and you're looking at a window containing a document (either an untitled document or one you created earlier). What you want to do now is open another document created with the same application.

1. **Choose Close from the File menu to close the current document.**

 If there are any unsaved changes, the application will alert you and offer the option of saving the changes before closing the document.

 With some applications, you can have several documents open at a time. In other words, it isn't always necessary to close one document before you can open another.

2. **Choose Open from the application's File menu.**

A dialog box appears, containing a directory of the current folder or disk. The directory title (and a folder or disk icon) is above the alphabetized list of the directory's contents. The name of the current disk (and a disk icon) appears to the right.

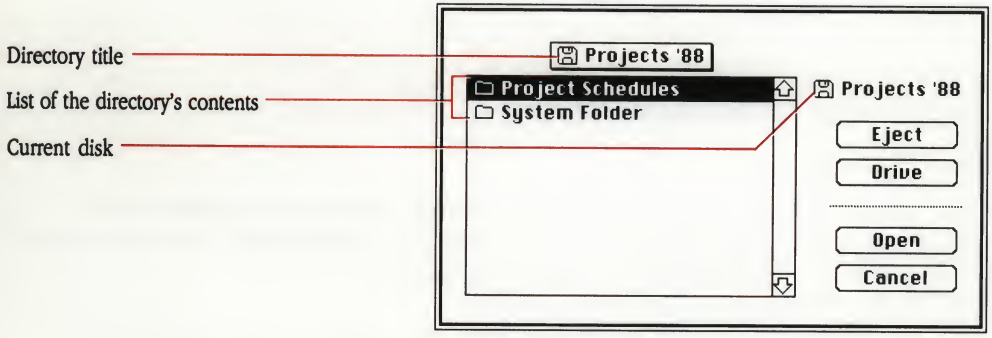


Figure 3-15
Directory dialog box for opening a document

The folders in this dialog box correspond to the folders you create in the Finder.

Within applications, folders show only those documents the current application can open, even if the corresponding folders in the Finder contain other documents or applications.

3. **To see the contents of a folder in the current directory, select its name and click Open, or just double-click its name.**

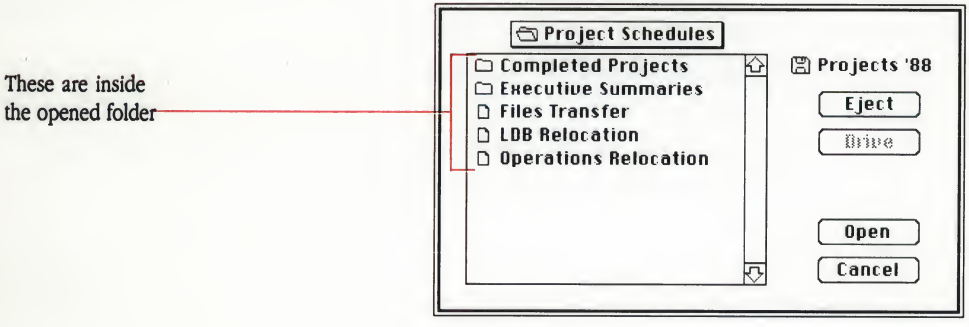


Figure 3-16
Opening a folder in the directory dialog box

You can move through the entire hierarchy of folders in this way, opening folders within the currently open folder, until you reach the document you want to open.

4. **To trace your way back through the hierarchy of folders, press on the directory title and choose the folder you want.**

 A list appears below the directory title when you press on the title or anywhere in the bar that contains the title. Each folder in the hierarchy is in the list, and the disk directory is at the end of the list. (By the way, the disk directory shows you any items on the desktop as well as items in the disk's directory window.)

5. **To close the currently opened folder and drop back to the preceding level in the directory, click the disk icon that appears above the Eject and Drive buttons.**

 You can repeat this process until you get to the top of the hierarchy.

6. **To see documents and folders on other disks, use the Drive and Eject buttons.**

 Each time you click Drive (or press the Tab key), the Macintosh goes to the next disk in a disk drive, cycling through any that are available.

7. **To open the document you want to work on, click its name and then click Open (or double-click its name).**

 To select a document or folder in the current directory quickly, type the character or characters you want to find and to select. If you *pause* while typing, the next character you type is considered a new request rather than a continuation of the old.

 You can also use the arrow keys to move up and down the list of names.

 You always enter the hierarchy of documents and folders at the place where you last opened or saved a document.

Using the Save command

A document is stored in the computer's memory only temporarily until you save it on a disk.

1. **Choose Save from the application's File menu.**

 Use the Save rather than the Save As command for routine, periodic saving of your document. The Save command saves a document with the original name you gave it and puts it exactly where it came from when you opened it. (When you want to save the current document with a different name, or copy it to a different folder or disk, choose the Save As command.)

2. **If this is a new document that's never been saved before, type a name for it in the directory dialog box.**

 You see a directory dialog box like the one that comes up when you choose the Open command. But this one has a place for you to type names for the documents you save. (In fact, it's similar to the dialog box you get when you choose the Save As command.)

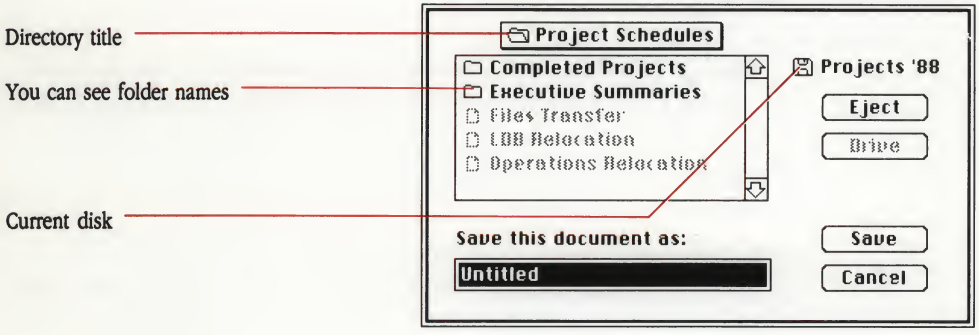


Figure 3-17
Directory dialog box for the Save command

Using the Save As command

Use the Save As command when you want to save a document with a different name, in a different folder, or on a different disk.

1. **Choose Save As from the application's File menu.**

 A dialog box appears, containing a directory of the folders contained in the current folder or disk. You see the directory name (and a folder or disk icon) above the alphabetized list of the folders it contains; the name of the current disk (and a disk icon) appears to the right. The folder names in this dialog box correspond to the folders you create in the Finder.

- To see folders or documents inside a folder in the directory, select the folder and click Open (or double-click the folder's name). You see any folders within the folder you opened.

 You can move through successively deeper levels of the hierarchy this way. Open folders within the currently open folder until you open the one in which you want to save your document.

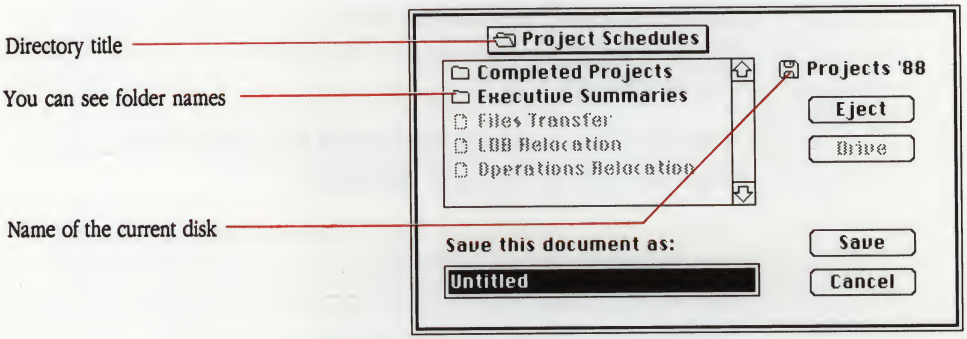


Figure 3-18
Save As directory dialog box

When you're saving (rather than opening) documents, you see the entire contents of the folders you open. Except for folders, the names of items appear dimmed. (But the names are readable, allowing you to determine whether there is an existing document with the same name as the document you're saving.)

- To move back through the hierarchy of folders, press on the directory title (or anywhere in the bar that contains it). The list that appears shows the names of all the folders you moved through in the hierarchy. At the end of the list is the "top" level—the directory for the disk you're working with. (By the way, the disk directory shows you any items on the desktop as well as items in the disk's directory window.) Simply drag to the name you want, and release the mouse button.
- To close the currently opened folder and drop back to the preceding level in the directory, click the name of the current disk.
- To cycle through any other disks available in other disk drives, click the Drive button (or press the Tab key). If the Drive button is dimmed, there are no disks in other disk drives.
- To exchange a 3.5-inch disk for one that's already inserted, click Drive until you see the name of the disk you want to eject. Then click the Eject button. The disk will be ejected, and you can insert another disk.

2. **Type a new name for the document if it's a new document or if you want to change the current name; otherwise, it will be saved with the same name.**

 You can use any character or symbol on the keyboard except a colon (:), and you shouldn't use a period as the first character. You can use uppercase or lowercase letters and put spaces between words. Names can be any length up to 31 characters, but long names can become unwieldy. It's usually best to limit them to the space you have to type them in.

 Even though more than one document on a disk can have the same name as long as they're in separate folders, it may be easier to keep track of documents if you give each version a different name.

3. **To save the current document in the folder named at the top of the list, click Save.**

 You always enter the hierarchy of documents and folders at the place you where you last opened or saved a document.

 - *Two items with the same name?* When you click Save, if there's another item with the same name in the same directory, you'll be asked whether you want to replace the existing one. Clicking Yes means the earlier version will be replaced by the one you are saving.

Where does your information go?

When you open an existing document so you can revise it (the perfect first draft has yet to be created), the computer leaves the original on the disk and brings a *copy* into the computer's memory. When you've finished making changes on the copy, you decide whether you want to keep the new version or not.

You usually have the option of saving the new version with the original name, saving it with a different name, or not saving it at all. If you save the new version with the same name as the original, it replaces the original on the disk. If you don't use the same name, with most applications the original on the disk isn't changed. It's like having an original document and making photocopies of it to edit. When you've tried different changes and are satisfied with a particular version, you can change the original.

Save often

Any document you're working on is being held temporarily in the computer's memory. If you accidentally trip over the power cord or the electricity goes off, everything you've done—but haven't saved—vanishes forever. To ensure that your work will be there when you need it, save it on a disk by choosing Save from the File menu every 15 minutes or so. That way you'll never lose more than a coffee break's worth of work. (With certain database programs you can lose everything—even what you've saved—if there's a power failure of any sort. If the work you're doing in a database application is important, it's a good idea to make frequent backup copies of your work on 3.5-inch disks for insurance.)

If you have a hard disk, you should regularly back up the information on it. See the *Macintosh Utilities User's Guide* for instructions on using HD Backup to help back up a hard disk.

- *Automatic saves:* Some applications save changes you make to a document as soon as you make them; the manual that comes with the application lets you know if this is the case.

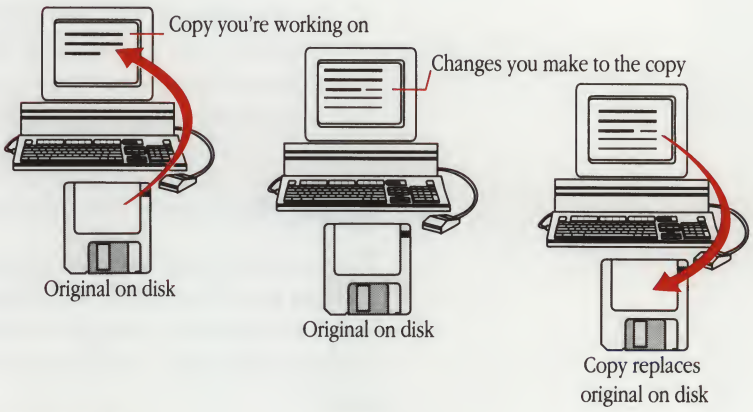


Figure 3-19
Where information goes

Printing

From the Finder desktop, you can print a document, a group of documents (if they were created with the same application), the contents of the entire screen, or a disk or folder directory. (With an ImageWriter® II printer you can also print the contents of the active window.) You can print a document whenever you can see its icon and a disk that contains its application is currently inserted. When you print from the Finder, the document's application is opened automatically.

If you're using an ImageWriter II, make sure that the printer is ready, the select light is on, and the paper is at the top of a form.

If you're using a printer other than the ImageWriter II, if you have more than one printer, or if your printer is attached somewhere other than the printer port, use the Chooser desk accessory to tell the computer which printer to use. See "The Chooser" in Chapter 5.

- *MultiFinder and background printing:* The information in this chapter is true for printing whether you are working in the MultiFinder environment or the single Finder environment. However, with a LaserWriter® printer and MultiFinder, you can take advantage of the background printing feature. (With this feature, you don't have to wait for a document to finish printing before you can use the Macintosh again.)

 To find out how to use background printing, see Chapter 10, "MultiFinder."

Choosing a printer

1. **Choose the Chooser desk accessory from the Apple menu.**
2. **In the Chooser window, select the type of printer you want.**
3. **In the Select box, select the name of the printer you want to print to.**

For more information, see "The Chooser" in Chapter 5.

Using Page Setup with LaserWriter printers

The Page Setup command lets you define a number of printing features, such as the size of the paper you print on and the orientation of your document on the printed page. Because the most commonly used options are preset, you are not required to use this command every time you print. However, it's useful to know what's available—in case you want to do something special with a document you're printing. Many of these features are explained in your LaserWriter manual, but some features are so new they were not included in the printer manual. The newest features are explained here.

1. Choose Page Setup from the File menu.

You see this dialog box:

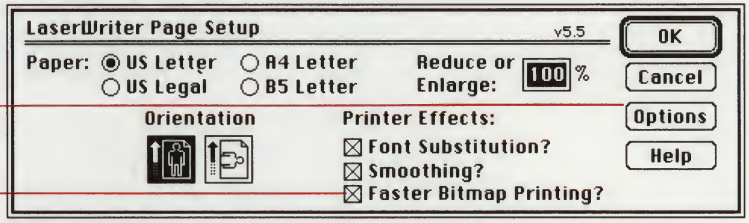


Figure 3-20
LaserWriter Page Setup dialog box

Faster Bitmap Printing preprocesses your bitmaps (such as MacPaint or Kanji-text bitmaps). Generally, this results in faster printing. In rare cases, however, some documents may not print with this option turned on. You may receive an error message that concludes with something like, "...document is OK but cannot be printed." If this happens, turn off Faster Bitmap Printing and try again.

- *For expert users:* Some of these printing enhancements may be meaningful only to expert users. For example, to understand the advantages of Precision Bitmap Alignment, you should be familiar with terms such as *bitmap* and *object-oriented graphics*. If you want to see what difference a particular Page Setup setting makes, turn it on and select an unimportant document to print.

2. To see additional features, click Options.

This picture changes to reflect the options you select

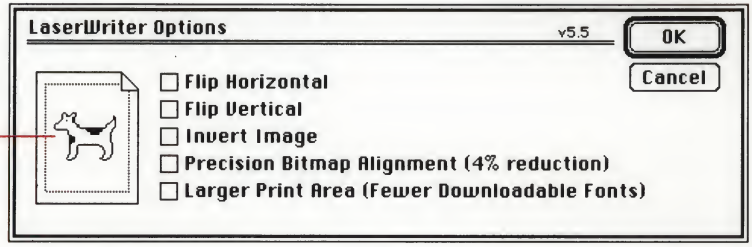


Figure 3-21
LaserWriter Options dialog box

- The first two options, Flip Horizontal and Flip Vertical, change the image of your page along a horizontal or vertical axis.
- Invert Image prints a negative image of your document. What was white is black, and vice versa.
- Precision Bitmap Alignment prints your bitmap images at precisely four times the resolution of the Macintosh screen. (Bitmap images are created in applications such as MacPaint.) The resulting printed image is 4% smaller than normal. Consequently, the other elements of your page, object-oriented graphics and text, are also reduced by 4%. This option is useful for avoiding minor distortion of bitmaps. For example, if you paste a picture from MacPaint into MacDraw, your picture could be slightly distorted unless you use this option.
- Larger Print Area lets you print on more of the total page area—if your application will allow it. However, when you select this option, you'll be using some memory in the LaserWriter that can hold downloadable fonts. If you turn on this option and can't download all the fonts you need, turn off Larger Print Area to make room for the fonts.

All five of these options are portrayed graphically in the picture area on the left side of the dialog box. As you select an option, you can see its effect on the example. The default setting for each of these options is off (not selected).

For a brief reminder of how to use these options, you can click the Help button in the Page Setup dialog box.

Printing a document from within the Finder

1. **Select the icon that represents the document you want to print.**

 If necessary, insert the disk or disks that contain the document and the application you used to create it, open the disk icon and any folders you need to, and scroll until you see the document icon.

 - *Page Setup:* When you are printing documents from the Finder, the printer uses the last Page Setup chosen for that document. If you want to change the settings at this point, see "Printing a Document From Within an Application," later in this chapter.

2. **Choose Print from the File menu.**

 One or more dialog boxes might appear, with options for printing your document.

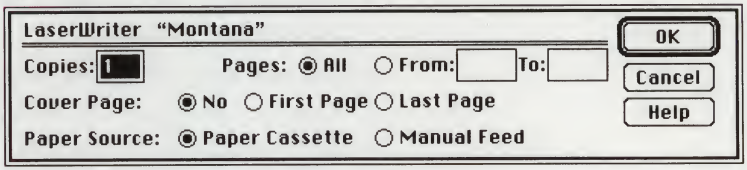


Figure 3-22
Print dialog box

Printing a group of documents from within the Finder

1. **Select the document icons.**

 To select more than one document to print, hold down the Shift key as you click the icons.

 If necessary, insert the disk or disks that contain those documents and the application you used to create them, open the disk icons and any folders you need to, and scroll until you see the document icons.

2. **Choose Print from the File menu.**

 The selected documents will be printed.

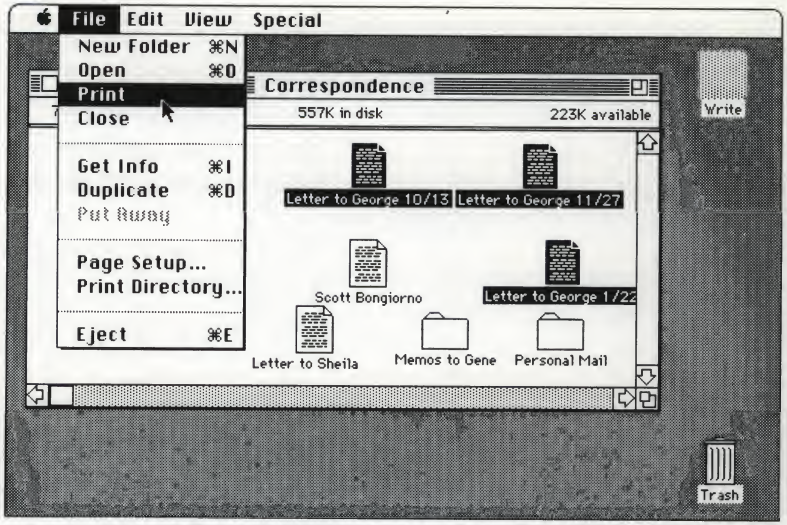


Figure 3-23
Documents selected for printing

Printing a document from within an application

To print a document from within an application, the application must be open and the document must appear in an active window.

1. **Choose Page Setup to set printing options such as page orientation and paper size.**

 If you tend to use the same setup all the time, you can skip this step.

2. **Choose Print from the File menu.**

 In most applications, one or more dialog boxes appear. You can click the various options to control the way your printed document will look. If you're using a printer other than an ImageWriter II, if you have more than one printer, or if your printer is attached somewhere other than the printer port, use the Chooser desk accessory to tell the computer which printer to use. Some applications may not let you use the Chooser; choose Quit and use the Chooser in the Finder. See "The Chooser" in Chapter 5.

Printing the directory of a disk or folder

1. **In the Finder, select the disk or folder icon whose directory you want to print, or make the directory window active.**

2. **Choose Page Setup from the File menu to set paper size, printing orientation, and other options.**

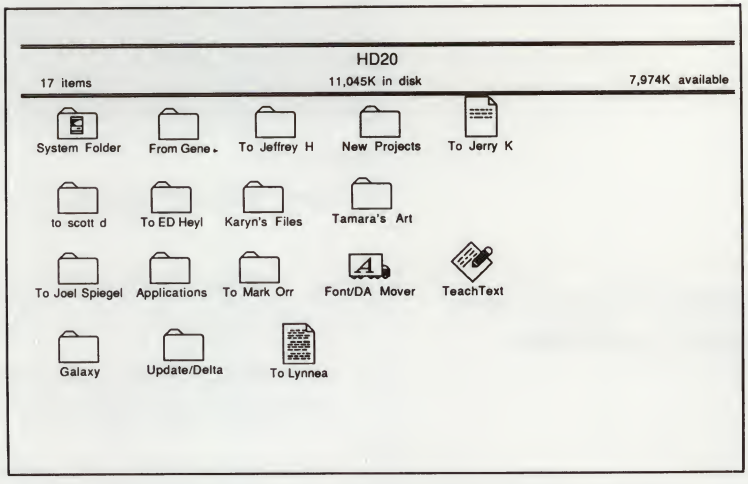
3. **Choose Print Directory from the File menu.**

 A dialog box will appear.

4. **Select printing options from the choices that appear in the dialog box, and click OK or press Return.**

 The printing options will vary depending on the application on the disk or in the folder.

 The directory is printed in whatever view you have it arranged.



HD20

Name	Size	Kind	Last Modified
Applications	--	folder	Fri, Aug 28, 1987 7:13 PM
Font/DA Mover	37K	application	Thu, Oct 8, 1987 12:00 PM
From Gene	--	folder	Mon, Aug 24, 1987 5:07 PM
Galaxy	--	folder	Wed, Dec 9, 1987 4:44 PM
Karyn's Files	--	folder	Sun, Dec 13, 1987 1:41 PM
New Projects	--	folder	Sun, Dec 13, 1987 4:39 PM
System Folder	--	folder	Fri, Dec 11, 1987 3:31 PM
Tamara's Art	--	folder	Sun, Dec 13, 1987 1:41 PM
TeachText	15K	application	Thu, Jan 15, 1987 2:04 AM
To ED Heyl	--	folder	Fri, Dec 11, 1987 11:12 AM
To Jeffrey H	--	folder	Sun, Mar 29, 1987 1:52 PM
To Jerry K	1K	TeachText document	Fri, Dec 11, 1987 11:13 AM
To Joel Spiegel	--	folder	Tue, Oct 27, 1987 3:09 PM
To Lynnea	5K	MacWrite document	Mon, Aug 3, 1987 1:37 PM
To Mark Orr	--	folder	Fri, Oct 30, 1987 4:41 PM
to scott d	--	folder	Tue, Oct 20, 1987 10:40 AM
Update/Delta	--	folder	Tue, Oct 27, 1987 3:09 PM

Figure 3-24
Printouts of different views of one directory

Using the Trash

When you need to free up space on a disk, or have grown tired of clutter or confused by redundant copies of memos that are now irrelevant, the Trash is a receptacle for items you want to throw away. You can throw away a document, folder, or application whenever you can see its icon. The Trash can be visible as an icon or opened into a directory window.

When you put an item in the Trash, the Trash icon "bulges" to let you know there's something in it. If you want to empty it—and reclaim the space the discarded files take up—choose Empty Trash from the Special menu.

In fact, whether you empty it or not, files won't stay in the Trash indefinitely. However, you can usually recover what you've thrown away unless one of these events occurs:

- You choose Empty Trash, Restart, or Shut Down from the Special menu.
- You copy, duplicate, or rename other items.
- You start an application.
- You eject a disk by dragging it to the Trash.

If you open the Trash and can see the icon for a document, folder, or application in the Trash window, you can recover it.

Another common use for the Trash is to eject disks. Dragging a disk to the Trash ejects the disk and removes its icon from the desktop; it has no effect on the contents of the disk. (If the disk is the current startup disk, dragging its icon to the Trash ejects it but leaves the dimmed icon on the desktop.) See Chapter 7, "3.5-Inch Disks," for details on ejecting disks.

Removing a document, folder, or application

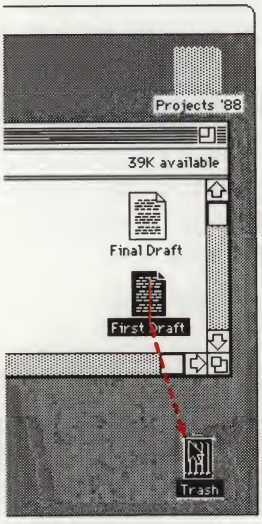


Figure 3-25
Dragging to the Trash

1. **Open the window that contains what you want to remove, and scroll until you see the icon or icons.**

2. **Drag the icon or icons that represent what you want to remove to the Trash icon or window.**

 To select more than one icon, hold down the Shift key as you click the icons. Discard the contents of an entire disk by choosing Select All from the Edit menu and then dragging any item to the Trash; the rest will follow.

 When you discard a folder, the folder and all its contents disappear.

 To reclaim the space immediately, choose Empty Trash from the Special menu. (But be aware that you won't be able to recover anything once you've emptied the Trash.)

You can't throw away anything on a locked disk or any documents that have been individually locked; you must unlock the disk or document first. (For instructions on unlocking a disk, see Chapter 7, "3.5-Inch Disks." For instructions on unlocking documents, see "Unlocking a Document or Application," earlier in this chapter.)

Recovering an item from the Trash

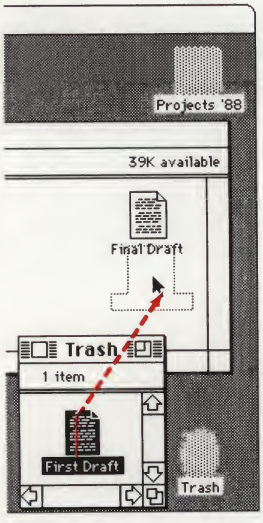


Figure 3-26
Recovering an item from the Trash

You can recover an item as long as you can see its icon in the Trash window.

1. **Open the Trash window and scroll until you can see the icon that represents what you want to recover.**

2. **Drag the icon out of the Trash window onto the desktop or into another window.**

 To select more than one icon to recover, hold down the Shift key as you click the icons.

 If you can't remember where items in the Trash came from, you can *select* what you want to recover and choose Put Away from the File menu. This puts the items back where they came from originally.

CHAPTER 4

Finder Menu Commands

WHO NEEDS THIS CHAPTER?

If you want a quick reminder of what happens when you choose any of the commands from the Finder menus, this chapter has the information.

What's in this chapter?

The Finder's menus allow you to do all your desktop-related tasks. The menus are presented in the order in which they appear on the Finder menu bar, reading from left to right:

- Apple menu
- File menu
- Edit menu
- View menu
- Special menu
- Color menu (available on a Macintosh II with a color monitor)

This chapter provides a brief explanation of each menu command. You'll find detailed descriptions of the commands in other chapters of this manual—in connection with tasks you perform on your Macintosh.

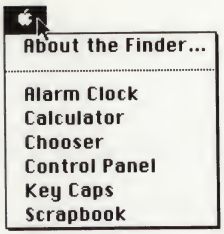


Figure 4-1
Apple menu

The Apple menu

The Apple menu gives you access to the About the Finder window and any desk accessories installed on your Macintosh. (In addition, with MultiFinder on, you can use the Apple menu to move among open applications. For details, see Chapter 10, "MultiFinder.")

About the Finder

This item shows the version number (and the authors) of the Finder and System files on your startup disk. You can also see the total memory (RAM) in your Macintosh and, in the lower half of the window, a memory graph. The graph in Figure 4-2 shows how much memory has been set aside for the operating system and the Finder.

The memory graph is especially important when you turn on MultiFinder. Then it shows how much memory has been allocated to any applications you have opened (in addition to the memory for the System and Finder). With MultiFinder, this graph is an important aid in helping you manage available memory on your Macintosh. (For details, see Chapter 10, "MultiFinder.")

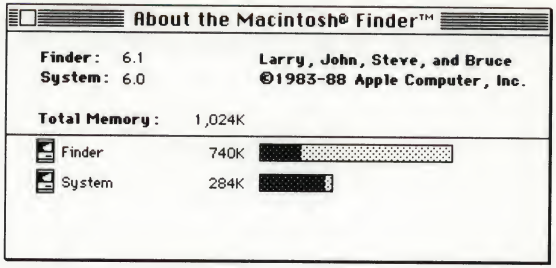


Figure 4-2
About the Finder window

Desk accessories

Choosing a desk accessory makes that accessory appear on the desktop. You can use the Edit menu to cut, copy, and paste the information in many desk accessories.

The desk accessories are explained more fully in Chapter 5.

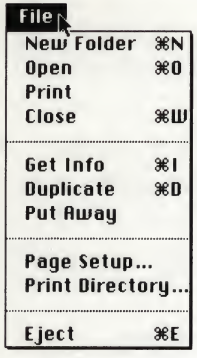


Figure 4-3
File menu

The File menu

The commands in the File menu operate on icons and windows.

- **New Folder.** New Folder creates an empty folder that can hold documents, applications, or other folders. New folders appear in the active window on the desktop (as opposed to on the desktop itself), and you can type a name immediately after creating an empty folder. If no directory windows are open, the New Folder command is dimmed.

- **Open.** The Open command opens the selected icon into a window. If the icon represents a document, opening it also starts the application used to create that document, and loads the document so you can work on it. If the icon represents an application, opening it usually gives you a new, untitled document.

 For you to open a document, the application that created it must be on a currently inserted disk. Sometimes the application and document must be in the same folder.

 If you select a document and an application, the Finder attempts to use that application with the document. For example, selecting MacWrite (a word processing program) along with a text-only document you created with MacTerminal® (a telecommunications program) opens MacWrite to work on the text-only document.

 If you select several document icons and choose Open, the Finder tries to open the first icon's application to work on all the selected documents.

- **Print (from the Finder).** Most of the time you'll print a document while you're actually working in the application that created it. However, you can also use the Print command from the Finder desktop.

 The Print command prints the documents represented by the selected icon or icons (assuming, of course, your printer is hooked up correctly). If you select a group of icons, as long as all of them were created with the same application, they'll all be printed.

 - *With MultiFinder turned on:* If you are working in the MultiFinder environment, it is possible to select documents for printing that were created with different applications. However, since MultiFinder will attempt to open all the relevant applications before beginning to print, the Macintosh may run out of memory.

 To print a document, you must have the application that created it on a disk whose icon appears on the desktop. Document printing from the Finder follows the rules and printing procedures of that document's application.

 With most applications when you choose Print, a dialog box appears. Select the options you want, and click OK or press Return. See each application's manual for more information on how to print with that application. See each printer's manual for information about using that printer.

- **Close.** Like the close box, the Close command closes the active window, zooming it back down to its icon. The icon remains selected. (If the active window is a desk accessory, it just disappears.) The next frontmost window, if there is one, becomes the active window.

- **Get Info.** Get Info opens a window that displays information about whatever the selected icon represents. The displayed information includes
 - the kind of item (document, folder, or application)
 - if it's a document, which application created it
 - its size
 - which disk and drive it belongs to
 - the date it was created
 - the date it was last changed
 - the version number of an application (if available)
 - a comment box where you can make notes about the icon
 - the Suggested Memory Size (for use with MultiFinder)
 - the Application Memory Size (also for use with MultiFinder)

 You can add text by typing in the comment box and editing it as you edit any text.

 The Locked check box lets you lock a document or application (but not a folder). When the Locked box is checked, that document or application can't be thrown away and its name can't be changed. You can't save any changes to a locked document.

 You can still drag or open a selected icon while its information window is open.

- **Duplicate.** The Duplicate command duplicates the selected items on the same disk. The duplicates are named *Copy of,* followed by the name of the original.

 Duplicating a folder duplicates the folder and all its contents. If you had previously moved a document, folder, or application from the folder to the desktop or a different window, that item will not be duplicated. (The system will assume that you meant not to include the item.)

- **Put Away.** Put Away returns any selected documents, folders, or applications on the desktop or in the Trash window back to the folders and disks they belong to. This command is dimmed when no icons are selected on the desktop or in the Trash window.

- **Page Setup.** Page Setup lets you set up the page size, orientation, and other options for directories that you print using the Print Directory command. The Page Setup command doesn't work with documents that you print from the Finder; each document's page setup is controlled by the Page Setup command within the application that created it.

- **Print Directory.** Print Directory prints the actual contents of the active directory window, in whatever view you have the directory arranged. (See "The View Menu" later in this chapter.) What you see gets printed—icons, document names, and so on—as opposed to the contents of documents.
- **Eject.** The Eject command ejects the selected disk or the disk represented by the active window. If no disk is selected, the Finder looks for an inserted disk to eject, starting with the current startup disk. Whenever a disk has been ejected, its icon and the icons belonging to it are dimmed to show they're no longer available. (You can also eject a disk by dragging its icon to the Trash.)

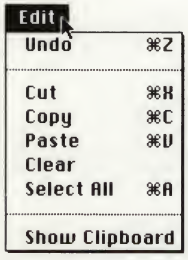


Figure 4-4
Edit menu

The Edit menu

The Finder's Edit menu helps you to edit

- the names of disks, documents, applications, or folders
- text in the comment box of an information window (opened by selecting the icon and choosing Get Info from the File menu)
- text or pictures in some desk accessories

❖ *Icons:* You cannot use this menu to cut or copy icons. You reproduce icons by dragging or duplicating them. See "Duplicating Documents, Folders, or Applications" and "Copying an Icon to a Different Disk" in Chapter 3.

Selecting an icon also selects its title. Anything you subsequently type replaces the old text. Clicking the selected text itself makes an insertion point appear. You can edit this text the same way you edit any text.

- **Undo.** This command undoes your last text-editing action in some applications and desk accessories that use text. (It may undo other actions in some applications.) For example, if you choose Get Info from the File menu and type something wrong in the text box, you can choose Undo to erase the typing and start fresh.
- **Cut.** Cut *removes* the selected material and places it on the Clipboard (replacing the previous contents, if any).
- **Copy.** Copy puts a copy of the selected material on the Clipboard (replacing the previous contents, if any). The "original" stays where it was when you selected it.

 See also "Duplicate," earlier in this chapter.

- **Paste.** Paste puts a copy of the contents of the Clipboard at the insertion point. You can continue to paste copies until you cut or copy a new selection (which replaces the old contents of the Clipboard).
- **Clear.** Clear removes the selected material *without* placing it on the Clipboard. The contents of the Clipboard (if any) remain intact.
- **Select All.** This command selects all icons in the active window or, if no windows are open, all icons on the desktop.
- **Show Clipboard.** Show Clipboard displays a window with the current contents of the Clipboard—that is, whatever you last cut or copied.



Figure 4-5
View menu

The View menu

You might keep your directory windows arranged by icon most of the time. But the commands in the View menu also let you view directories of disks, folders, or the Trash in other arrangements.

In any text view of a disk or folder directory, small icons appear to the left of each document, folder, or application title. Icons and text in titles behave the same way in whatever view you choose. Clicking either an icon or its title selects the item; the pointer then becomes an arrow when you move it over the icon itself (in case you want to move or copy the item, or to select something else) and an I-beam when you move it over the item's title (in case you want to place an insertion point for editing). Dragging an unselected icon or title moves or copies the item—depending on where you drag it *to*. See "Duplicating Documents, Folders, or Applications" and "Copying an Icon to a Different Disk" in Chapter 3.

The current view of the active window is marked in the View menu by a check.

- **By Small Icon.** By Small Icon shows the contents of the active directory window with small icons to the left of the icon names. This view is especially helpful when you have large numbers of documents and applications on a disk—when looking at your hard disk, for example. You can see more icons per square inch in this view.
- **By Icon.** By Icon shows the contents of the active directory window as icons, just as they would appear on the desktop.
- **By Name.** By Name lists the contents of the active directory window alphabetically by name. Uppercase and lowercase letters are considered equivalent.

- **By Date.** By Date lists the contents of the active directory window chronologically by modification date. The document you changed most recently is listed first. Folders' modification dates indicate when you created them or when you changed their contents by adding or removing items from them. This view is useful when you need to find files you changed recently.
- **By Size.** By Size lists the applications and documents in the active directory window by size, largest first. By Size is useful for seeing which documents are taking up the most room on the disk. Folders are listed alphabetically by title at the bottom of the list, following the applications and documents (but their size is not shown).
- **By Kind.** By Kind lists the contents of the active directory window by whether each item is a document, application, or folder. For a document, the window shows which application created it.
- **By Color.** If you have a Macintosh II with a color monitor, you can view icons according to their color. (See "The Color Menu," later in this chapter.)



Figure 4-6
Special menu

The Special menu

- **Clean Up.** Clean Up is only available when you have chosen By Small Icon or By Icon views of your directories. The command you see will change slightly, depending on certain variables:
 - If you have an active directory window with no icons selected, the command will say Clean Up Window. If you choose it, the icons will be arranged in neat rows and columns on an invisible grid, filling in from left to right and top to bottom.
 - If you have one or more icons selected, the command will say Clean Up Selection. When you choose it, each selected icon will move to the nearest available space on the grid—not necessarily filling in from left to right and top to bottom. (To deselect all icons, click in the gray area of the desktop.)
 - If no directory windows are open and no icons are selected, the command will say Clean Up Desktop and will move icons on the desktop to the nearest available space on the grid.

- *Neater icons:* If you hold down the Option key while you press the Special menu, the command will simply say Clean Up. Choose it (while still holding down the Option key) to display the contents of an active directory window (or the desktop, if there is no active window) neatly and compactly.

- **Empty Trash.** Empty Trash permanently discards the contents of the Trash and makes the space it took on the disk available for immediate use. (The Finder empties the Trash automatically whenever it needs the space, when you choose Shut Down or Restart from this menu, or when you start an application.)

- **Erase Disk.** Erase Disk completely erases and initializes the disk whose icon you've selected. A dialog box will offer the usual choices about initializing the disk.

 You can't erase the current startup disk because your computer needs information on that disk in order to work. If you want to erase a startup disk, start your computer using a different disk.

 See "Preparing 3.5-Inch Disks for Use" in Chapter 7 for more information about initializing.

- **Set Startup.** Set Startup lets you turn MultiFinder on or off.

 - With MultiFinder off, you can select one document or application and use Set Startup so that application will open automatically upon startup.

 - With MultiFinder on, you can also use Set Startup to select applications (and documents) to open automatically upon startup. This is helpful if you use the same set of applications every day. For details, see Chapter 10, "MultiFinder."

- **Restart.** Restart ejects any inserted disks (first saving any necessary information) and empties the Trash, and then restarts the computer. This is not only a shortcut, but the best way to restart the Macintosh when you need to use a different startup disk.

- **Shut Down.** Shut Down ejects any inserted disks (first saving any necessary information) and empties the Trash. On a Macintosh II, Shut Down also turns off the computer.

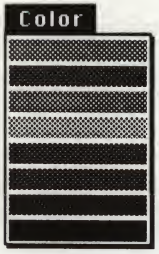


Figure 4-7
Color menu

The Color menu

If you have a Macintosh II with a color monitor, the menu title Color appears in the Finder menu bar. The menu itself is a pull-down palette of colors. If you select any icons on the desktop and then choose a color from the Color menu, the selected icons will be drawn in that color. This gives you another way to organize items on your desktop—according to color. The View menu has a By Color option. (It sorts colored icons in the same order as the colors in the color menu.)

CHAPTER 5

Desk Accessories

WHO NEEDS THIS CHAPTER?

This chapter tells you what you need to know to use the Apple menu's desk accessories—mini-applications available when you're working in the Finder and in most applications. Desk accessories let you do simple calculations while you're working on a word processing document, tell the computer which printer to use, and even keep a scrapbook full of your favorite illustrations or text you use in a variety of documents.

What's in this chapter?

This chapter explains how to use the basic Apple desk accessories, presenting them in the order they appear on the Apple menu:

- Alarm Clock
- Calculator
- Chooser
- Control Panel
- Key Caps
- Scrapbook

Some desk accessories are relatively simple to use. (You may be able to figure out how to use them without reading the information here.) Others offer a variety of options and require some step-by-step explanation. When this is the case, the numbered steps (printed in **boldface** type) describe the actions you must take to use that desk accessory.

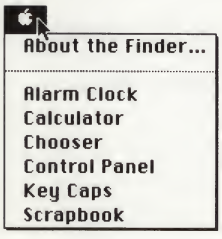


Figure 5-1
Desk accessories automatically installed in your System file

Where do desk accessories come from?

Six desk accessories—the Alarm Clock, Calculator, Chooser, Control Panel, Key Caps, and Scrapbook—are included with officially released versions of Apple's system software, and are installed automatically on your startup disks. (See Chapter 9, "Startup Disks.") Any desk accessories installed on a startup disk are available in the Apple menu whenever that disk is the current startup disk. You can also use the Font/DA Mover to add desk accessories to or remove them from your startup disks. (See the *Macintosh Utilities User's Guide* for information on using the Font/DA Mover.)

The *Macintosh Utilities* disks include three additional desk accessories you might want to add to your startup disks: Find File on disk 1; Note Pad and Puzzle on disk 2. You can also purchase additional desk accessories and add them to your startup disks.

- *Find File:* The hierarchical file system makes it easy to store dozens of documents away in different folders—especially on a hard disk. You can even store several documents or folders with the same name in different places, or in folders within folders within folders. But with all that flexibility you may sometimes lose track of where you've stored a particular document. Find File locates the file or folder you need. If you decide you want to add Find File to the Apple menu on your startup disk, you need to use the Font/DA Mover utility to install it. For details on installing and using Find File, see the *Macintosh Utilities User's Guide.*

You choose desk accessories from the Apple menu on the far-left side of the menu bar.

With most applications, you can keep one or more desk accessories open on your desktop while you work on documents. (However, other active windows may overlap or cover a desk accessory window.) You can make a desk accessory window active by clicking it or choosing the accessory again from the Apple menu, and you can move it by dragging its title bar.

You close desk accessories either by clicking their close boxes or by choosing Close from the File menu. (With some applications, you need to close desk accessories before you can work on a document.) In general, desk accessories close automatically when you open a document or an application from the Finder, or when you quit an application. However, if you turn MultiFinder on, any desk accessories you open will stay open until you choose to close them. (See Chapter 10, "MultiFinder," for details.)

The Alarm Clock

The Alarm Clock desk accessory is handy when you want to check the time or date, and you can use it to alert you when it's time for a meeting or a coffee break.

- *Note:* The Alarm Clock settings are stored in the computer itself, and are independent of the startup disk you're using. This means that if you set the alarm to go off at a specific time, it will alert you when the time arrives, regardless of the current startup disk. (Moreover, changing the startup disk will not unset the alarm—you have to do that yourself.)

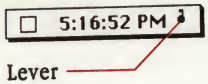


Figure 5-2
Compact Alarm Clock

When you choose Alarm Clock from the Apple menu, a compact clock displays the hour, minute, and second. When the clock is active, the current settings for time and date are automatically selected (even though they aren't highlighted), so you can copy and paste them into a document you're working on or into a desk accessory that accepts text.

To see more, click the lever on the right side of the time. With the lever down, two more panels appear. The bottom panel displays icons for time, date, and alarm. Select one of these icons, and use the middle panel to "set" whatever item you selected. To go back to the compact clock, click the lever again.

To reset the time or date, for example, click the corresponding icon in the bottom panel. Then click again in the middle panel to select the digits you want to change. Click the small arrows to scroll the numbers higher or lower, or type the numbers you want. You can use the Tab key to move to the next field you want to change (from hour to minute to second, for example). When you're satisfied with the setting, click the lever to return to the compact clock. You can close the Alarm Clock completely by clicking the close box or choosing Close from the File menu.

You can also change the time and date using the Control Panel. See "The Control Panel," later in this chapter.

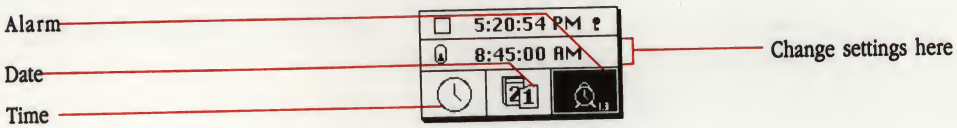


Figure 5-3
Expanded Alarm Clock

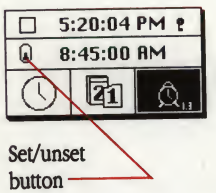


Figure 5-4
Alarm button settings

To set the alarm, follow the same procedure you would for setting the time and date; then click the set/unset button in the middle panel. When the alarm is set, the small marker moves to the top of the button. Another cue that you've set the alarm is the alarm clock icon itself. When the alarm is set, the clock displays small lines radiating away from its bell. Note that you must select another panel or click the lever to return to the compact clock, or the alarm will not go off.

Once you've set the alarm, you can forget it. When the time you set arrives, your Macintosh will alert you with a sound or by blinking the menu bar (depending on how you've set the speaker volume in the Control Panel). If you miss the alarm, the Apple symbol (apple) in the menu bar will blink persistently until you respond. To unset the alarm, open the expanded clock and click the set/unset button.



Figure 5-5
Calculator

The Calculator

To use the calculator, simply choose it from the Apple menu and enter the calculations as you would on any four-function pocket calculator. You can use the mouse to click numbers and functions, or you can use the keyboard. But using the numeric keypad is probably the easiest way to work. (The Calculator keys correspond exactly to what's on your keypad, no matter which keyboard you have.)

You can copy the calculation results (which are automatically selected) and paste them into any document or another desk accessory. You can also select and copy numbers from a document and paste them into the calculator's display.

The Chooser

The Chooser is a multipurpose desk accessory and, depending on your particular setup, you may use it often—or rarely. While its primary purpose is to let you communicate with devices such as printers, the variety of printers available (especially if your computer is connected to a network) require the Chooser to accommodate a number of different possibilities.

A **zone** is one part of a series of interconnected networks. Connecting networks together makes it possible to share expensive devices (printers, for example).

You can use the Chooser to choose between devices connected directly to your Macintosh's printer and modem ports, or among printers, file servers, or other devices on an AppleTalk® network system. If you have **zones** on your AppleTalk network, the Chooser lets you scan those zones for available devices. You also use the Chooser to connect to or disconnect from an AppleTalk network.

A **resource** is a system file that resides on the startup disk and makes it possible for your system to communicate with devices such as printers and the mouse. These files usually have the same name as the device they support.

The Chooser lets you select any device or print from any attached printer for which there's a **resource** file installed on the current startup disk. The *Macintosh Printing Tools* disk contains all the printing resources currently available for use with Apple printers. If you have not installed the resource for your printer on your startup disk, see Chapter 9, "Startup Disks."

Using the Chooser with a directly connected Apple printer

If you have a printer (such as an ImageWriter) directly connected to a port on the back of your Macintosh, follow these instructions.

1. **Choose the Chooser desk accessory from the Apple menu.**

 The printer icon appears at the upper left.

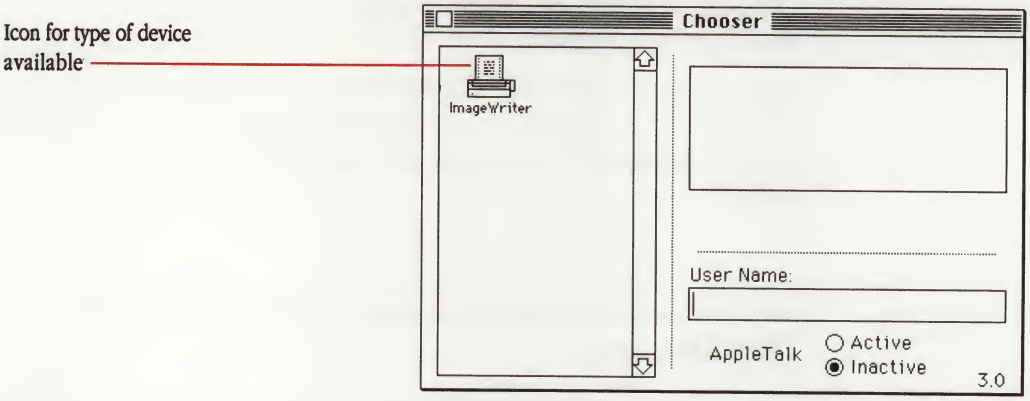


Figure 5-6
ImageWriter icon in the Chooser window

- *Don't see everything you expected?* If the printer icon you expected is missing, you haven't installed the necessary printer resources on your startup disk. (See "Using the Installer" in Chapter 9.)

2. **Select the icon for your directly connected printer.**

 Icons representing the ports on your Macintosh appear in the Select box.

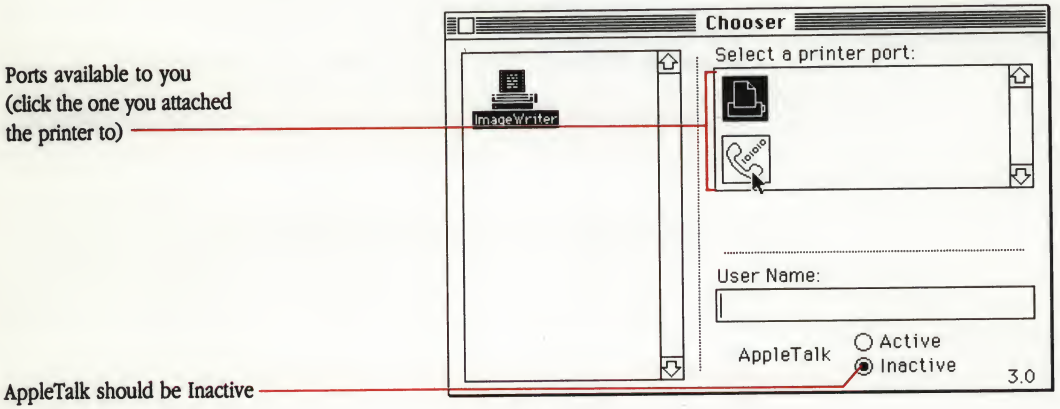


Figure 5-7
Printer ports in the Chooser window

3. **Select the port you used to attach the printer to your Macintosh.**

4. **If necessary, click Inactive for the AppleTalk option.**

 Because your Apple printer is directly connected to your Macintosh (not connected by an AppleTalk network), AppleTalk should be inactive.

5. **To confirm your choice, close the Chooser window.**

 Choose Close from the File menu or click the close box on the Chooser window.

As long as you continue using the printer you identified, there is no need to open the Chooser again. If your needs change (for example, if you are able to connect to an AppleTalk network and use shared devices), open the Chooser and make the appropriate selections.

Using the Chooser with devices on AppleTalk

If you have a LaserWriter printer or an ImageWriter II or LQ printer with an installed AppleTalk Option card, you can connect it to your Macintosh on an AppleTalk network. Depending on the size and complexity of the network, you can also connect to file servers and other shared devices.

1. **Choose the Chooser desk accessory from the Apple menu.**

 The Chooser shows icons for various devices, depending on what you've installed on the current startup disk.

Devices available on AppleTalk

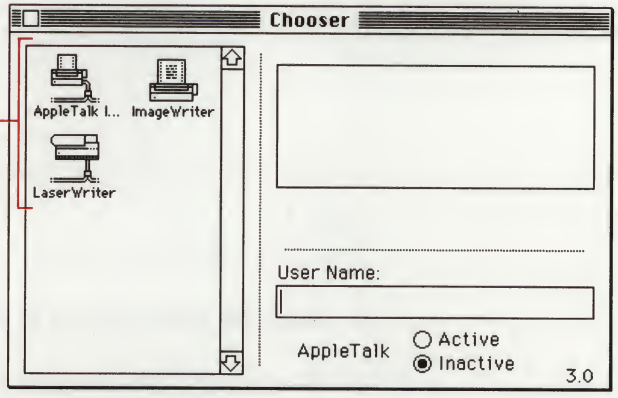


Figure 5-8
Chooser window showing device icons

- *Don't see everything you expected?* If something is missing (for example, you have a LaserWriter printer and don't see the LaserWriter icon), you haven't installed the necessary printer resources on your startup disk. (See "Using the Installer" in Chapter 9.)

2. **Click the icon that represents the *type* of device you want to use.**

 What you select depends on the devices available on the network you are connected to. For example:

 - If you are connected by AppleTalk to one or more LaserWriter printers, click the LaserWriter icon.
 - If you are connected by AppleTalk to an ImageWriter II, click the AppleTalk ImageWriter icon.
 - If you are connected by AppleTalk to a file server, click its icon.

 When you click an icon, the Select box lists the names of all the devices of that type available on your network.

3. **Click the device *name* to select the device you want.**

 On most networks it is a common practice to assign names to identify different devices. Even if there is only one name listed, select it.

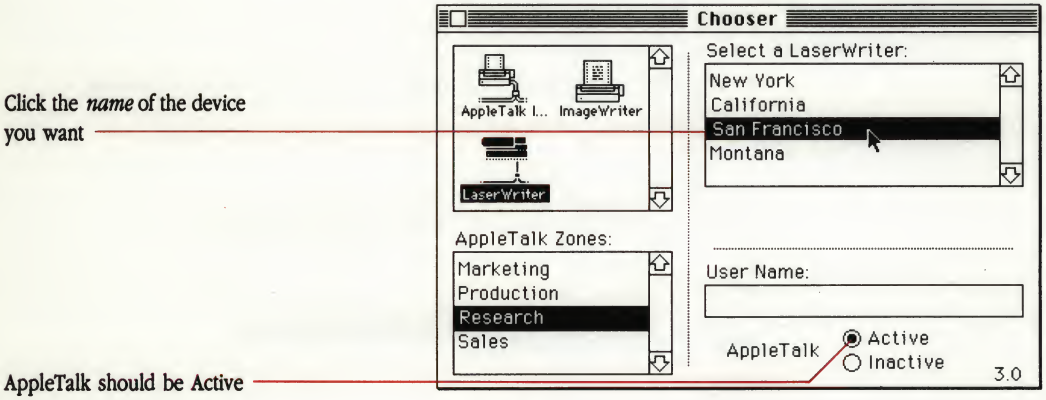


Figure 5-9
Selecting a specific device by name

4. **If necessary, click Active for the AppleTalk option.**

 Because the device you identified is connected to your Macintosh on an AppleTalk network, AppleTalk should be active.

5. **Type your name in the User Name box so the network can let other users know when you're using a shared device.**

6. **To confirm your choices, close the Chooser window.**

 Choose Close from the File menu or click the close box in the Chooser window.

As long as you continue using the printer or other network device you identified, there is no need to open the Chooser again. If your needs change (for example, you want to use a different printer or access a file server), open the Chooser and make the appropriate selections.

Connecting or disconnecting AppleTalk

AppleTalk is a network system you can use to connect computers and to share printers and other devices. (See your AppleTalk manual for details.)

1. **Choose the Chooser desk accessory from the Apple menu.**

2. **Make the selection you want.**

 - Click Inactive if you're physically disconnected from AppleTalk.
 - Click Active if you're physically connected to AppleTalk.

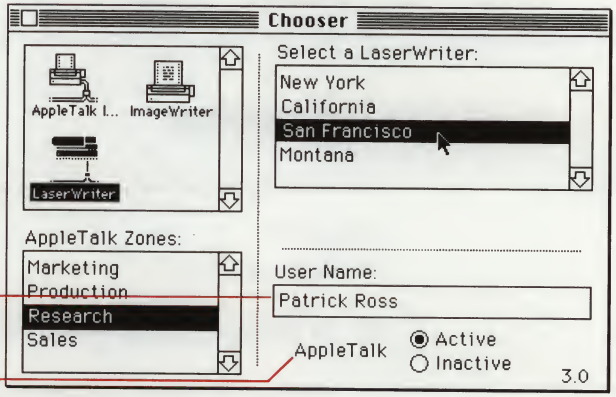


Figure 5-10
Chooser window

The AppleTalk connection setting should always match whether you're connected to AppleTalk or not. When you physically connect or disconnect AppleTalk, always open the Chooser immediately and click the appropriate box.

3. **Type your name in the User Name box so the network can let other users know when you're using a shared device.**

 This is a courtesy—helpful if several documents are waiting to print. When you send a document to the printer, your Macintosh displays the name of any user whose document is currently printing (ahead of yours). That way, if you want to know how big the document is or how long it may take, you know who to ask.

Choosing devices on other AppleTalk networks

AppleTalk networks can be linked together to form an interconnected series of AppleTalk zones. If your network is linked with other AppleTalk networks and you have access to other zones, use the Chooser to scan for devices in those zones.

1. **Choose the Chooser desk accessory from the Apple menu.**

2. **Click the icon that represents the type of device you want to use.**

 If necessary, use the scroll bar to find the icon you want.

 At the lower left, the Zones box lists all zones you have access to, and the zone that first appears highlighted is the one your computer is in. At the upper right, the Select box lists the names of all devices (of the type you just chose) that are connected to the highlighted zone.

3. **Scan each zone by clicking its name until the device you want to use appears in the Select box.**

4. **Click the device name to select it.**

5. **Type your name in the User Name box so the network can let other users know when you're using a shared device.**

If you use the Chooser from within an application to change printers, choose Page Setup and confirm the settings you want before you choose Print.

The Control Panel

The Control Panel lets you set your preferences for such things as speaker volume, repeating key rate, location of the startup disk, and even the background pattern and color of your desktop. Control Panel settings are remembered by the computer itself, even when you switch your system off. (A built-in battery provides power for the computer to remember the settings.)

The Control Panel desk accessory has a number of options. First, on the left side of the panel is a list of scrollable icons. (If you have a Macintosh Plus, the list may be short enough to fit without scrolling; with a Macintosh II, you will need to scroll to see all the options.) When you select any of the icons, a set of features related to that icon appears at the right.

You'll find the settings for such items as Desktop Pattern in the panel that appears when the General icon is selected in the list. Settings for Keyboard, Monitors, Mouse, Sound, and Startup Device all appear in when you select those icons. (There is also a Color panel for use on a Macintosh II with a color monitor.)

- *Do you have a Macintosh II?* Most of the panels contain options available on all Macintosh computers. Two exceptions are Color and Monitors. If you have a Macintosh II you can use a color monitor and attach multiple monitors.

Using the General Control Panel

1. **Choose Control Panel from the Apple menu.**

 The General Control Panel window appears. (The General icon is highlighted by default when you first open the Control Panel.)

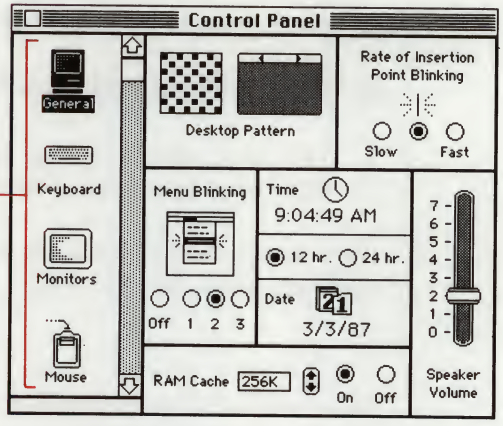


Figure 5-11
General Control Panel

2. **Make selections and change settings to suit your needs.**

To set Desktop Pattern (monochrome monitor)

You can customize your desktop by selecting from a variety of desktop patterns or designing your own.

1. **Click the General icon if it isn't already highlighted.**

 The Control Panel shows a miniature desktop where you can look at a pattern and a magnified view of the pattern.

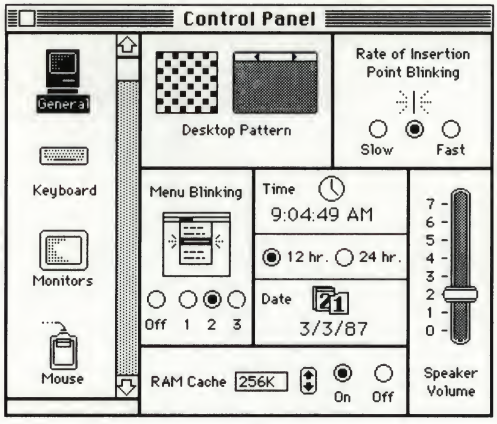


Figure 5-12
Desktop Pattern in the General Control Panel

2. **Change the pattern as you wish.**

 - Click (or drag through) individual dots to change them from black to white or vice versa.
 - Click the white "menu bar" in the miniature desktop to see a sample pattern. (Click on the right to see the next pattern; click on the left to see the preceding pattern.)
 - Set the pattern by clicking the miniature desktop below the white bar.

To set Desktop Pattern (color monitor)

If you have a Macintosh II with a color monitor, you can change the color of your desktop pattern and change the highlight color for text you are editing. In addition, there is a new Color menu in the Finder menu bar that lets you select colors for the icons on your desktop.

Changing the *pattern* of your desktop is the same whether you have a color or monochrome monitor. You can click the white "menu bar" in the miniature desktop to see sample patterns. When you find one you want, click the miniature desktop below the white bar.

1. **Click the General icon if it isn't already highlighted.**

 The Control Panel shows a miniature desktop where you can look at a pattern and a magnified view of the pattern. With a color monitor, you also see eight colors in a color bar (or eight shades of gray from a true gray scale).

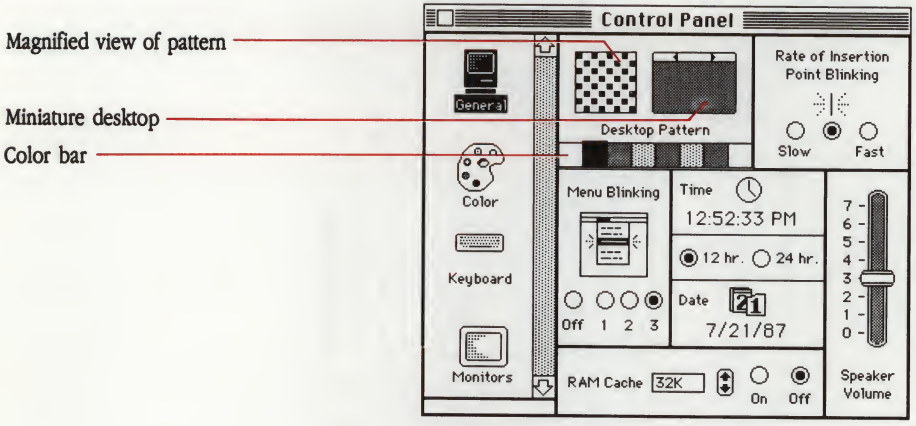


Figure 5-13
Desktop Pattern with color bar

2. **To see the preset patterns, click the white menu bar of the miniature desktop.**

 Each time you click, a different pattern will appear until you cycle through all the preset patterns.

3. **To change a color in the desktop pattern, click one of the eight colors in the color bar to select the color you want to work with.**

4. **In the pattern box at the left of the miniature desktop, click the dots you want to change.**

 You can also drag the pointer in the pattern box to change a group of dots.

5. **If you want to save a pattern you've created, double-click the miniature desktop.**

 The new pattern will replace the original you started with.

6. **To update your desktop with a pattern, click once on the miniature desktop showing the pattern.**

 - *Want different colors?* To change a color in the color bar, double-click it. This brings up a color wheel. (For instructions on using the color wheel, see "Using the Color Control Panel," later in this chapter.)

To set Rate of Insertion Point Blinking

When you click the pointer to insert text in a document, the insertion point blinks so it's easier to see on the screen. You can adjust the rate of its blinking.

1. **Click the General icon if it isn't already highlighted.**

 Use the scroll bar if necessary to bring the General icon into view.

2. **Click any button from Slow to Fast to set the rate at which the vertical bar marking the insertion point blinks.**

To set Menu Blinking

1. **Click the General icon if it isn't already highlighted.**

 Use the scroll bar if necessary to bring the General icon into view.

2. **Click any button from 1 to 3 to determine the number of times menu items blink.**

 If you don't want the menu to alert you by blinking, click Off.

To set the Time

1. **Click the General icon if it isn't already highlighted.**
2. **To select a time format, click either 12 hr or 24 hr.**
3. **Click the digits you want to change; then click the up or down arrow to scroll the numbers higher or lower.**

To set the Date

1. **Click the General icon if it isn't already highlighted.**
2. **Click the digits you want to change; then click the up or down arrow to scroll the numbers higher or lower.**

To use the RAM cache

RAM is an acronym for the term *random-access memory*. Generally, when people talk about how much memory their computer has, RAM is what they are referring to.

Using the RAM cache can greatly speed up your work, allowing an application to store some of the information it needs in a part of memory you reserve just for this purpose. When the application needs the information again, it doesn't have to go to the disk but can get it much more quickly from the RAM cache in memory.

1. **Click the General icon if it isn't already highlighted.**

2. **Set RAM Cache to On.**

3. **Use the arrows to scroll to the amount of memory you want to use for the RAM cache.**

 Because the RAM cache takes some space in memory, you may not want to use it with applications that require large amounts of memory. A rule of thumb is to use no more than one-fourth of the computer's available memory for the RAM cache (that is, no more than 256K on a system with 1 MB of RAM).

 - *RAM cache and MultiFinder:* When you turn MultiFinder on, the system software will check the current RAM cache setting. If it is higher than 384K on a Macintosh with a total of 1 MB of memory, it will automatically be lowered to 384K. MultiFinder cannot operate with more than 384K set aside for the RAM cache on a 1 MB system. If you choose to install a RAM expansion kit to increase the computer's memory, the ceiling for the RAM cache with MultiFinder goes up proportionally. (The ceiling is 384K for each megabyte of RAM.)

 With MultiFinder, available memory may be shared by several open applications at one time. For this reason, Apple recommends setting the RAM cache no higher than 32K for each megabyte of memory (or turning it off) when you are working in the MultiFinder environment. For more information, see Chapter 10, "MultiFinder."

To set Speaker Volume

1. **Click the General icon if it isn't already highlighted.**
2. **Adjust for the volume you want by dragging the knob up or down.**

 If you set the lowest volume, the computer will alert you by blinking the menu bar rather than by making an alert sound.

 ❖ *If you have a Macintosh II:* The special sound chip in a Macintosh II gives you additional control over the sounds you hear. To find out how you can set preferences for the alert sound, see "Using the Sound Control Panel" later in this chapter.

Using the Color Control Panel

With a Macintosh II and a color monitor, the Color Control Panel gives you a way to change the highlight color on your screen.

You see a highlight when you select text to be edited—for example, when you select the name of an icon or a sentence within a paragraph. On a monochrome monitor, the highlight is always black or gray, but on a color monitor you can make your highlights as colorful as you want.

To change highlight color

1. **Choose Control Panel from the Apple menu.**
2. **Click the Color icon in the list on the left side of the panel.**

 The Color Control Panel appears.

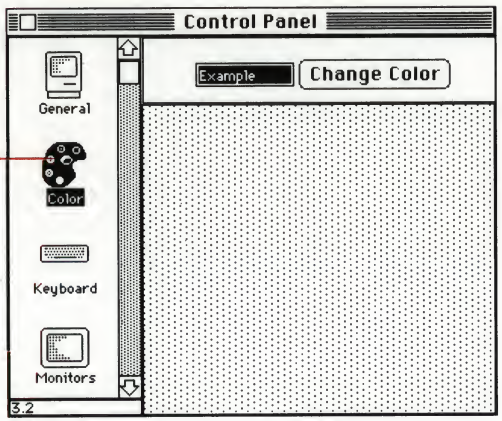


Figure 5-14
Color Control Panel

You see an example of the current highlight color and a Change Color button.

3. Click Change Color to bring up the color wheel dialog box.

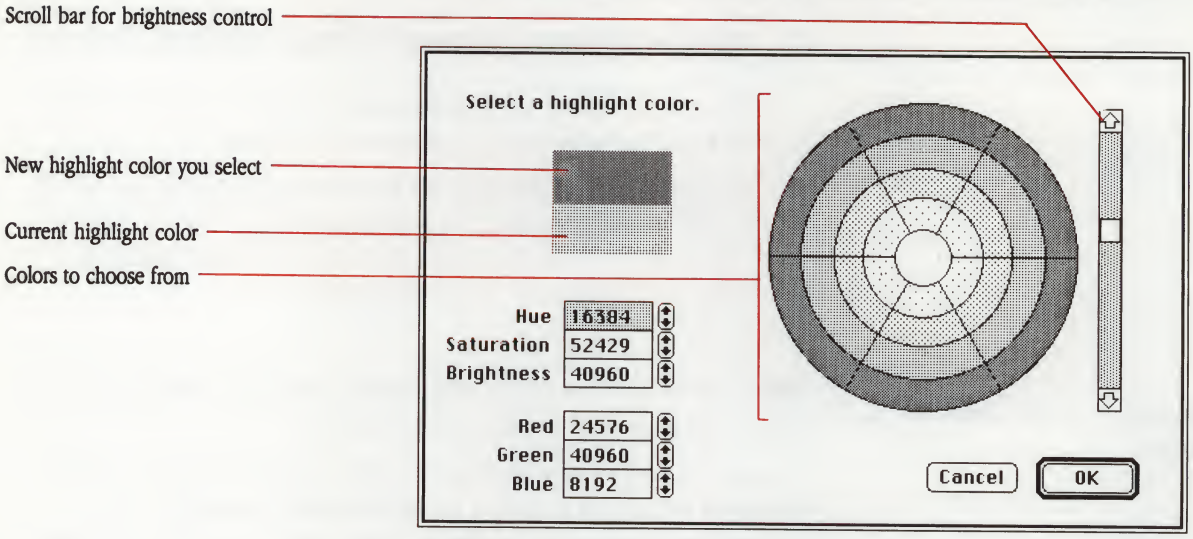


Figure 5-15
Color wheel dialog box

4. Click anywhere on the color wheel to try out a new highlight color.

Clicking on the color wheel or dragging the pointer around the wheel is the simplest way to select a new highlight color. When you do this, the color appears in the top half of the small display box (in the upper-left corner of the window). The bottom half of the display box continues to show the current highlight color.

The colors at the outer edge of the wheel are the purest in *hue*. As you move toward the center of the wheel you increase the amount of white added to the pure hue (known as *saturation*). If you want to tone down the *brightness* of the colors, use the scroll bar to the right of the color wheel. (Down makes colors darker; up makes them brighter.)

In the lower-left corner of the window are two sets of three small boxes. Each set shows a numerical representation of any color you choose from the color wheel, and you can use either set to enter a color choice by typing numbers. For example, if you use the color wheel to come up with a really unusual color, you can write down the numbers representing that color—from either trio of boxes. Then, if you want to, you can contact friends anywhere on the planet (as long as they have a Macintosh II with a color monitor) and give them the numbers. They can enter the numbers in the appropriate set of boxes on their screens and see the identical highlight color.

5. **When you are satisfied with the color you selected, click OK.**

Until you change it, that color will appear when you select text (for example, when you select the title of an icon to edit it). In some word processing applications, the color will not show; you'll see a black (or gray) highlight when you select text.

❖ *How many colors do you have?* With the Apple video card, you can display a maximum of 16 colors on the screen. If your Apple dealer has installed the video card expansion kit, you can display a maximum of 256 colors, chosen from a palette of over 16 million!

If you have not installed the video card expansion kit (or you choose to limit the number of colors displayed to fewer than 256), the results you get in choosing a highlight color from the color wheel dialog box may be unpredictable. You'll get a color, but not necessarily the color you expected. Applications that use color may also impose their own definitions of colors you can choose.

Using the Keyboard Control Panel

The Keyboard Control Panel lets you customize some features of the keyboard to suit your touch.

To set Key Repeat Rate

When you press and hold down a character key, you see that character repeating on the screen. You can set the rate at which a key you press will repeat.

1. **Click the Keyboard icon if it isn't already highlighted.**

 If necessary, use the scroll bar to bring the Keyboard icon into view.

2. **Click any button from Slow to Fast to set the rate.**

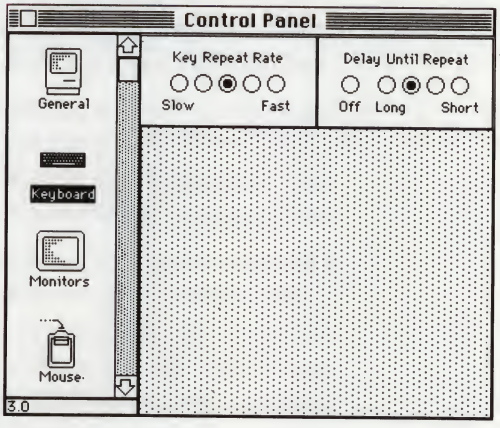


Figure 5-16
Keyboard items in the Control Panel

To set Delay Until Repeat

1. **Click the Keyboard icon.**

 Use the scroll bar if necessary to bring the Keyboard icon into view.

2. **Click any button from Long to Short to set the length of time the computer waits before repeating a key you're pressing. Click Off to turn off key repeating.**

 Set a longer delay if you're getting a lot of repeated characters when you don't want them.

Using the Monitors Control Panel

With a Macintosh II it is possible to attach as many as six monitors to your computer—mixing monochrome and color. And even if you have only one monitor, you use this control panel to define its status, depending on the features available with your video card.

To set monitor status for a single monitor

1. Click the Monitors icon if it isn't already highlighted.

The Monitors Control Panel appears.

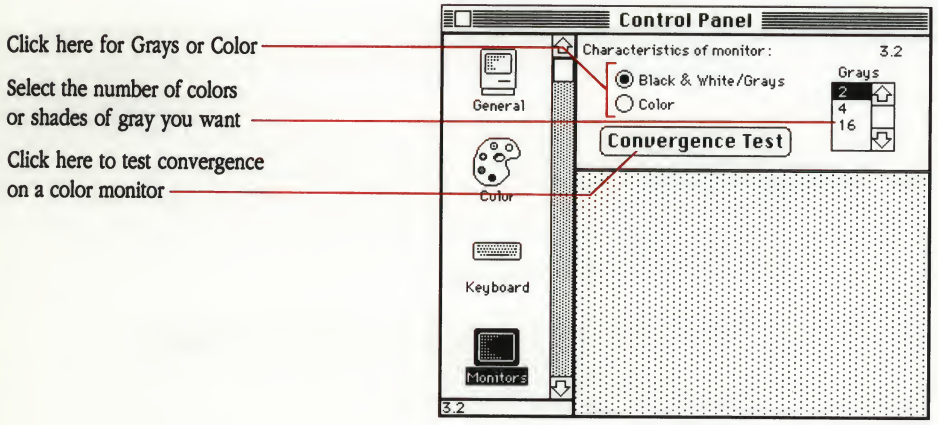


Figure 5-17
Monitors Control Panel for a single monitor

2. Click Grays or Color.

With a color monitor, though you may prefer color most of the time, you might want monochrome when you're doing word processing.

Clicking Grays gives you a true gray scale—evenly spaced shades of gray.

Monochrome monitors won't show color, of course, and you'll get the best quality grays if you click Grays. If you do click Color, you'll see grays that represent the luminance of the green color only.

3. Select the number of colors or shades of gray you want.

With the standard Apple video card, you can get a maximum of 16 colors or grays. With the video card expansion kit installed, you can get a maximum of 256. (More colors or grays means drawing to the screen will be a bit slower.)

If you choose to limit the number of grays to two, you will not be seeing a true gray scale. Black and white will be the only colors on your screen. (It will look the same as the screen on a Macintosh Plus or Macintosh SE.)

4. **If your monitor is color, click the Convergence Test button to check the convergence pattern.**

 This will help you verify that the red, green, and blue light beams are aimed correctly for the best color picture. (To learn how to adjust color convergence, see the monitor manual.)

 With a monochrome monitor the convergence pattern is not an issue, but it's OK to click the test button if you're curious.

 Once you've completed these selections, your monitor is ready to go. And you can always change your choices when your needs change.

To set monitor status for multiple monitors

With multiple monitors (all connected to your Macintosh II), you make the same choices as you would with a single monitor—and you repeat some parts of the process for each of your monitors. You also position your monitors to suit your needs, select a main monitor, and fine-tune the way your monitors relate to each other.

1. **Click the Monitors icon if it isn't already highlighted.**

 The Monitors Control Panel appears.

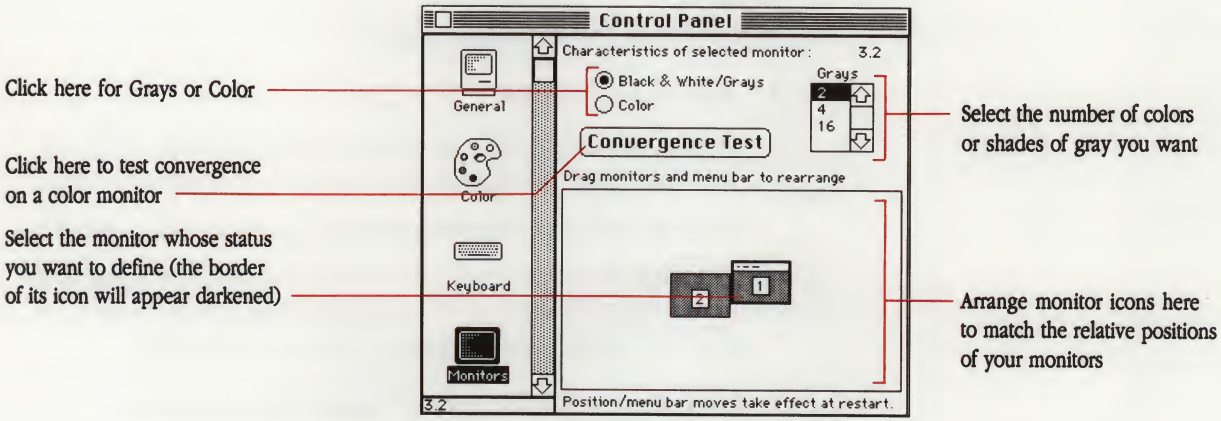


Figure 5-18
Monitors Control Panel for multiple monitors

The box at the bottom of the panel shows an icon for each of the monitors connected to your Macintosh II. The first time you bring up the panel, monitor 1 will be highlighted to show that it is the "selected monitor." (You will select each monitor in turn when you are ready to make choices about that monitor's status. See step 5.)

- *Aren't sure which monitor is which?* Identifying which monitor is number 1, 2, and so on can be confusing when you've got several plugged in. In fact, the number assigned is dependent on which expansion slot was used for the video card the monitor is connected to. Rather than take the lid off the main unit to identify cards in slots, you can use the Convergence Test button to help you locate each monitor.

 Select the icon for a monitor you want to identify, and click the Convergence Test button. The test pattern will appear on the monitor that corresponds to the icon you selected. In other words, if you selected the icon numbered 3, the test pattern appears on the monitor represented by that icon.

2. Click Grays or Color.

With a color monitor, even though you may prefer color most of the time, you might want monochrome when you're doing a lot of word processing.

Clicking Grays gives you a true gray scale—evenly spaced shades of gray.

Monochrome monitors won't show color, of course, and you'll get the best quality display if you click Grays. If you do click Color, you'll see grays that represent the luminance of the green color only.

3. Select the number of colors or shades of gray you want.

With the standard Apple video card, you can get a maximum of 16 colors or grays. With the video card expansion kit installed, you can get a maximum of 256. (More colors or grays means drawing to the screen will be a bit slower.)

If you choose to limit the number of grays to two, you will not be seeing a true gray scale. Black and white will be the only colors on your screen. (It will look the same as the screen on a Macintosh Plus or Macintosh SE.)

- *CloseView:* If you plan to use the CloseView™ utility (to assist users with visual impairment), do not select 16 or 256 colors or grays. CloseView does not perform well with more than 8 colors or grays. (See the *Macintosh Utilities User's Guide* for details.)

4. **If the selected monitor is color, click the Convergence Test button to check the convergence pattern.**

 This will help you verify that the red, green, and blue light beams are aimed correctly for the best color picture. (If you don't know how to adjust color convergence, see the monitor manual.)

 With a monochrome monitor the convergence pattern is not an issue, but it's OK to click the test button if you're curious.

5. **In the box at the bottom of the panel, click an icon to select the next monitor for which you want to define characteristics.**

 Repeat steps 2 through 5 for each of your monitors.

6. **Identify the positions of your monitors.**

 In the lower part of the panel, drag each icon to the correct position according to the actual location of the corresponding monitor in your work area. That is, if monitor 2 sits on a shelf above monitor 1, drag its icon to sit on top of the icon for monitor 1, and so on. Continue to place the icons until you've reproduced your entire monitor setup.

 Remember, if you've lost track of which monitor is which, you can use the convergence test to identify them. See the explanation at the end of step 1.

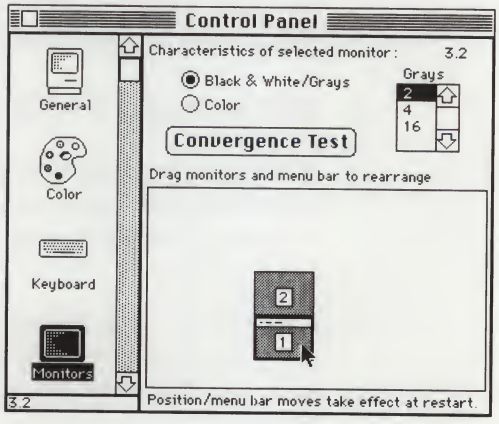


Figure 5-19
Arranging monitor icons to match the real thing

Put simply, to coordinate activities among multiple monitors, your computer needs to know where they are. (Assuming you want to make use of all the monitors, you have to tell the Macintosh which "borders" between monitors should be open for the pointer to pass through.)

In this part of the panel, you create a replica of your actual setup by positioning monitor icons to correspond to the physical arrangement of monitors in your work area.

7. **Identify your main monitor by dragging the miniature menu bar to the appropriate icon.**

The main monitor is the one on which you'll find the standard Finder menu bar. In effect, it's your base of operations. You can designate any one of your monitors as the main monitor.

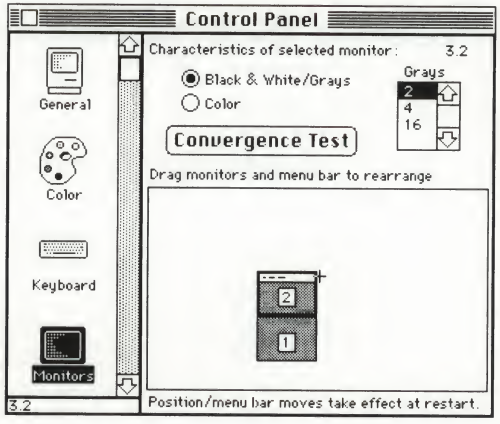


Figure 5-20
Identifying the main monitor

When you first use this panel, monitor 1 will automatically be selected as the main monitor. You can change that setting or leave it as is.

8. **If you have changed the positions of any monitor icons or identified a new main monitor, close the Control Panel and choose Restart from the Special menu.**

You must restart the computer for these changes to take effect.

Using the Mouse Control Panel

When you first install the newest system software, the speed of mouse tracking is preset to slow. This means that when you move the mouse, the pointer moves an equivalent distance on the screen. If you have never used a mouse before, this slow speed may be the most comfortable for you. However, it is possible to increase the mouse tracking speed so that moving the mouse one inch will move the pointer two inches. The advantage of this is that you can use a smaller surface area for moving the mouse.

To set Mouse Tracking

1. **Click the Mouse icon.**

 Use the scroll bar if necessary to bring the Mouse icon into view.

2. **Change the mouse tracking speed to suit your preference.**

 - Click one of the Mouse buttons to make the pointer movement speed variable. You won't have to move the mouse as far as you otherwise would when you want to jump to another part of the screen.

 OR

 - Click the Tablet button to keep the pointer speed constant.

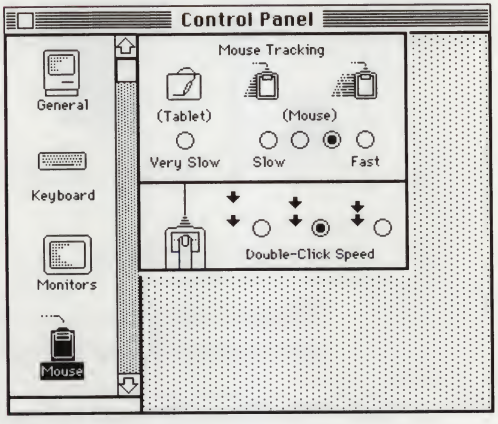


Figure 5-21
Mouse items in the Control Panel

To set Double-Click Speed

1. **Click the Mouse icon.**

 Use the scroll bar if necessary to bring the Mouse icon into view.

2. **Change the double-click speed to suit your preference.**

 - Click the leftmost button for the computer to interpret fairly slow successive clicks as a double-click.
 - Click the rightmost button if you've got a fast mouse-button finger.
 - Click the middle button if you're somewhere in between.

Using the Sound Control Panel

1. **Click the Sound icon.**

2. **Set the volume you want by dragging the knob up or down.**

 At the lowest level, the computer blinks the menu bar to alert you instead of making a sound. (This control is the same one that appears when you click the General icon. Setting the volume in either place moves the knob in both places.)

3. **In the Alert Sound Setting box, click the sound that you like.**

 There are several choices available. The speaker plays back each sound as you click it, and you can try them all to find the one you prefer to hear.

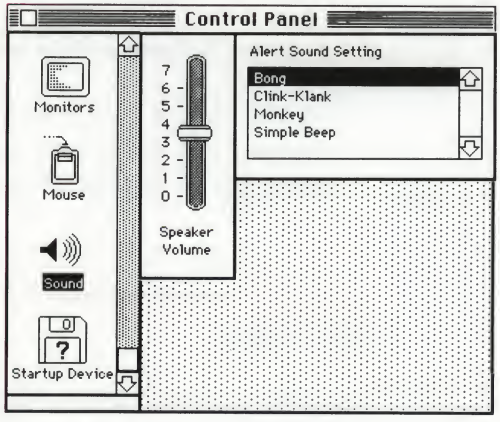


Figure 5-22
Sound items in the Control Panel

Using the Startup Device Control Panel

If you have more than one hard disk drive attached to your Macintosh SE or Macintosh II, you should identify one of them as your startup device. This will be the disk the computer looks for first at startup.

1. **Click the Startup Device icon.**

 Use the scroll bar if necessary to bring the Startup Device icon into view.

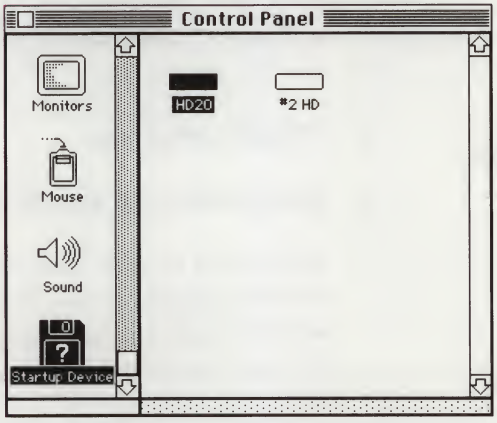


Figure 5-23
Startup Device Control Panel

 The icons you see represent all the devices that might contain the information the computer needs to get started.

2. **Click the device you want your computer to start from.**

 Until you change it, this will be the disk drive your computer will start from each time you turn your computer on (assuming there's no startup disk in one of the 3.5-inch disk drives).

Key Caps

If you make use of a number of different fonts, the Key Caps desk accessory lets you verify what each set of characters looks like. This is especially useful when you need to use diacritical marks with international characters (as in *soupçon* or *mañana*).

Using Key Caps

1. **Choose Key Caps from the Apple menu.**

 The menu bar changes and this window appears:

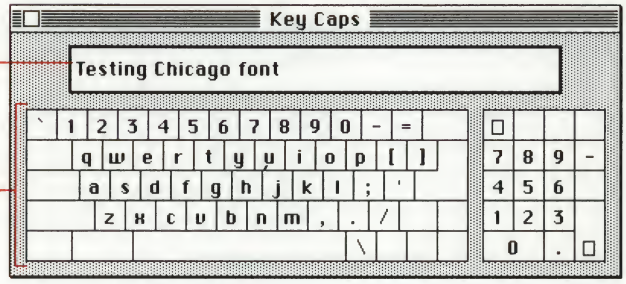


Figure 5-24
Key Caps

The window shows a keyboard template, and the font displayed first is the system font, Chicago, used extensively by the Macintosh. But you can change the template to show any font installed in the startup System file.

2. **To see different characters, pull down the Key Caps menu and choose another font from the list displayed.**

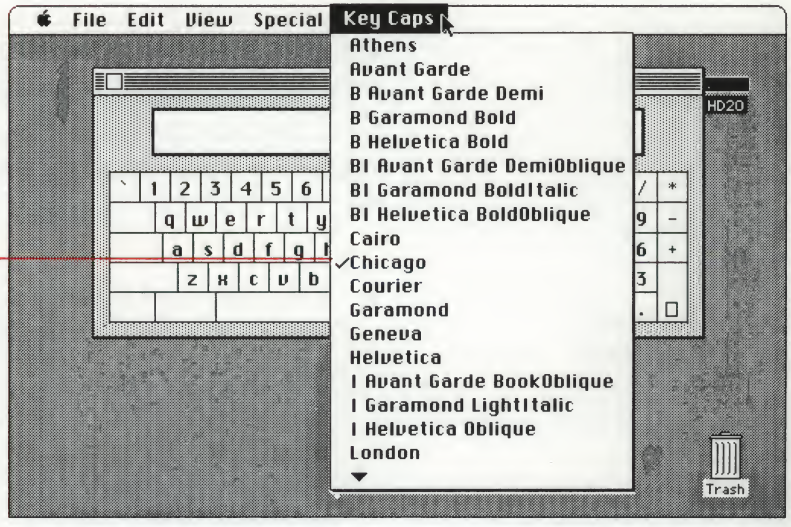


Figure 5-25
Key Caps menu

Choosing a font lets you see its characters in the Key Caps window as they'd appear as typed text. With any font you choose, you can use the Option, Shift, and Caps Lock keys to see the characters each key or key combination produces.

3. **To try out characters, type on your keyboard or click Key Caps keys.**

 Text you type on the keyboard or enter by clicking Key Caps keys appears in the text box at the top of the Key Caps window. You can edit this text in the usual way and cut and paste it into other desk accessories or any document (although pasted characters may not be in the same font).

See "Optional Characters" in Chapter 6 to learn how to produce accented characters using the diacritical marks in the optional character set.

The Scrapbook

You can paste your favorite pictures and text into the Scrapbook and retrieve them whenever you want to use them again. You can cut, copy, and paste images among the Scrapbook, your documents, and any desk accessory that uses text. (For example, you might keep your letterheads there.)

The contents of the Scrapbook are stored in the Scrapbook file on the current startup disk. You can move these Scrapbook files among your startup disks to customize the disks with the contents you want.

Depending on the size and contents of the image you paste into the Scrapbook, you might not see the entire image until you paste it somewhere else.

Adding an image to the Scrapbook

1. **With a document or desk accessory open, select the text or picture you want to add to the Scrapbook.**

 See each application's manual for how to select using that application.

2. **Choose Cut or Copy from the Edit menu.**

 Choosing Cut removes the original; choosing Copy just copies it. What you selected is placed on the Clipboard, where it remains until you next choose Cut or Copy.

3. **Choose Scrapbook from the Apple menu.**

4. **Choose Paste from the Edit menu.**

 The image is pasted in front of the current image in the Scrapbook. The text at the lower left tells you the position this image has in the Scrapbook. The text at the lower right tells whether the image is text or a picture. You can use the scroll bar to look at the different items in the Scrapbook.

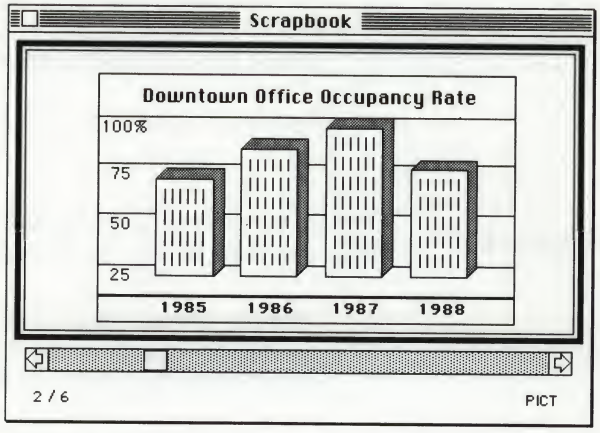


Figure 5-26
Scrapbook window

Removing an image from the Scrapbook

1. **Choose Scrapbook from the Apple menu.**

2. **Scroll to the image you want to remove.**

 As each image appears in the Scrapbook window, it is automatically selected.

3. **Choose Cut or Clear from the Edit menu.**

 The image is removed from the Scrapbook.

Moving an image from the Scrapbook to a document

1. **Choose Scrapbook from the Apple menu.**

2. **Scroll to the image you want to move or copy.**

 The current image is automatically selected.

3. **Choose Cut or Copy from the Edit menu.**

 The image is placed on the Clipboard, where it remains until you next choose Cut or Copy.

4. **Open the document you want to add the image to.**

 If the document is already open, just click in it to make it the active window.

5. **Select the place you want the image pasted.**

6. **Choose Paste from the Edit menu.**

 The image is pasted into the document.

Duplicating a Scrapbook file

You can make copies of a Scrapbook file and drag them to other startup disks where you want to use the same Scrapbook contents.

1. **Open the System Folder and select the Scrapbook File icon.**

2. **Choose Duplicate from the File menu.**

 An icon labeled *Copy of Scrapbook File* appears.

3. **Drag the icon to the System Folder on another startup disk.**

 If there is an existing Scrapbook file on this startup disk, drag it to the Trash to remove it. Or, if you want to save it, drag it to a different folder on the same disk. (You may want to rename it to help identify what's in it.)

4. **In the System Folder, select Copy of Scrapbook File and edit its name.**

 Click the icon if it's not already highlighted. Then select the words *Copy of* and press the Backspace (or Delete) key.

 The file must be in the System Folder and must be named Scrapbook File or the Macintosh will not be able to identify it and use it.

You can use this technique to create different versions of the Scrapbook File on the same startup disk—as long as each file has its own name. The only file the Macintosh will recognize and use is the one in the System Folder named Scrapbook File.

CHAPTER 6

Keyboards

WHO NEEDS THIS CHAPTER?

Along with the mouse, you use the keyboard to communicate with your Macintosh. This chapter will help you understand how to use all the features of your keyboard.

The size, shape, and layout of the available keyboards vary slightly, depending on which Macintosh you have:

- The Macintosh Plus comes with one keyboard.
- With a Macintosh SE or Macintosh II you have a choice of two keyboards, the Apple Keyboard or the Apple Extended Keyboard.



Figure 6-1
Different Macintosh keyboards

In most significant respects the three keyboards are similar. However, there are some small differences in the positions of some keys, and both keyboards for the Macintosh SE and Macintosh II have keys that don't appear on the Macintosh Plus keyboard. (For technical information on the differences between these keyboards, see the owner's guide that came with your computer.)

What's in this chapter?

No matter which version of the keyboard you have, it includes character keys, numeric keys, arrow keys, and other special keys. This chapter provides an illustrated map of each keyboard, annotated to explain what different keys do.

These are the topics covered in this chapter:

- Macintosh Plus keyboard
- Apple Keyboard (for Macintosh SE and Macintosh II)
- Apple Extended Keyboard (for Macintosh SE and Macintosh II)
- optional characters
- Easy Access
- menu command shortcuts
- keyboard shortcuts in the Finder

You don't have to read this chapter in any particular order. Locate the map of your keyboard in one of the first three sections. Following the keyboard maps are instructions for typing optional characters and international characters. Next, there's a section on how to use the Easy Access sticky keys and mouse keys (features that assist users who have difficulty using both hands on the keyboard or manipulating the mouse). And finally, there is information on using Command key shortcuts.

Macintosh Plus keyboard



Tab key: Moves the insertion point horizontally to the next stopping place (such as a tab stop or data field).

Caps Lock key: A Shift key for letters only (numbers and symbols aren't affected).

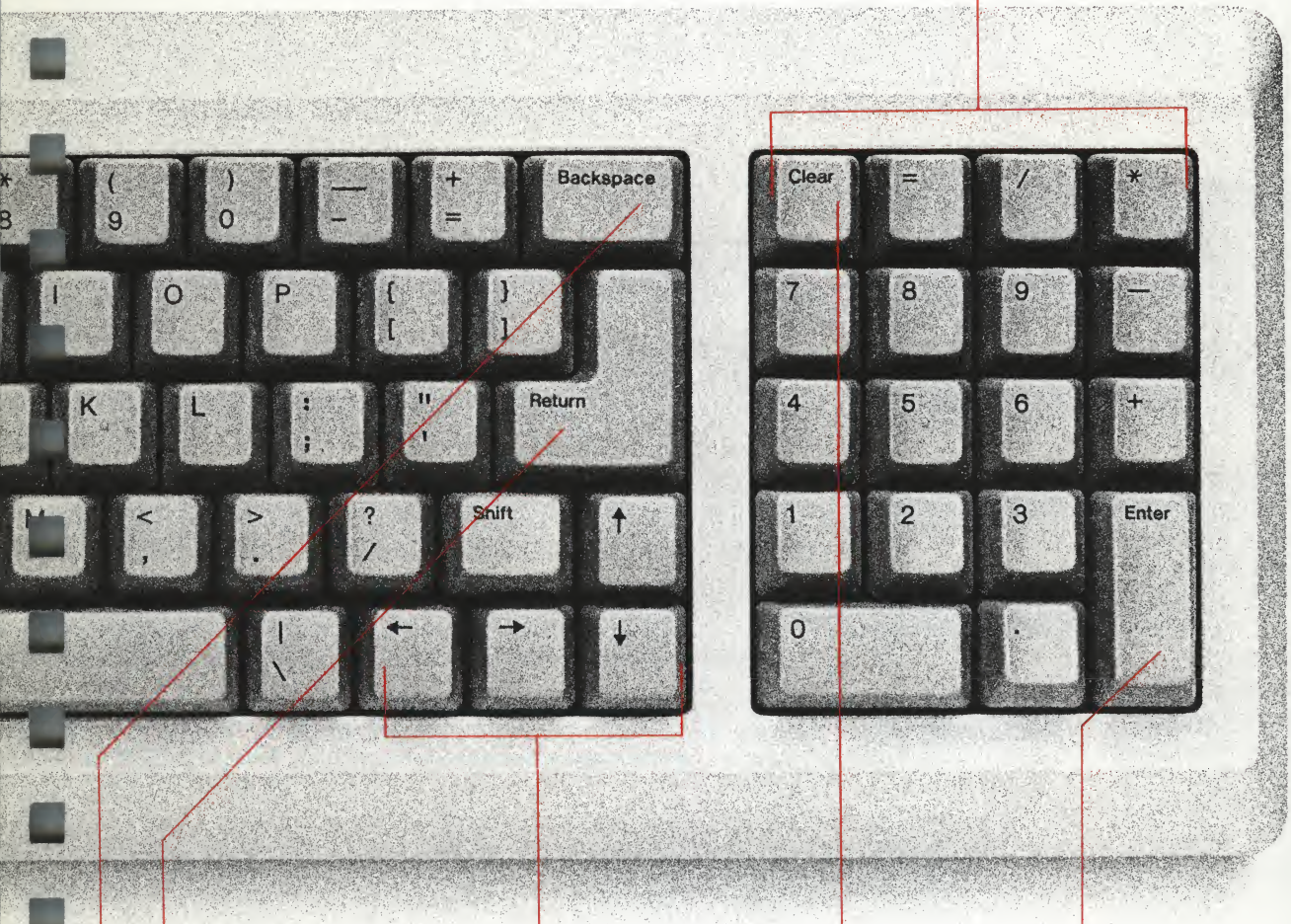
Shift key: Produces uppercase letters (or the upper character on the key).

Option key: The Option key in combination with other character keys produces an optional set of special characters.

Command key: The Command key in combination with another key is often a shortcut to choosing a command from a menu or (in some applications) canceling a long operation in progress, such as printing.

Figure 6-2
Macintosh Plus keyboard

Numeric keys: The arrangement of keys on the numeric keypad matches that on the Calculator desk accessory.



Return key: Moves the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button that confirms the default command.

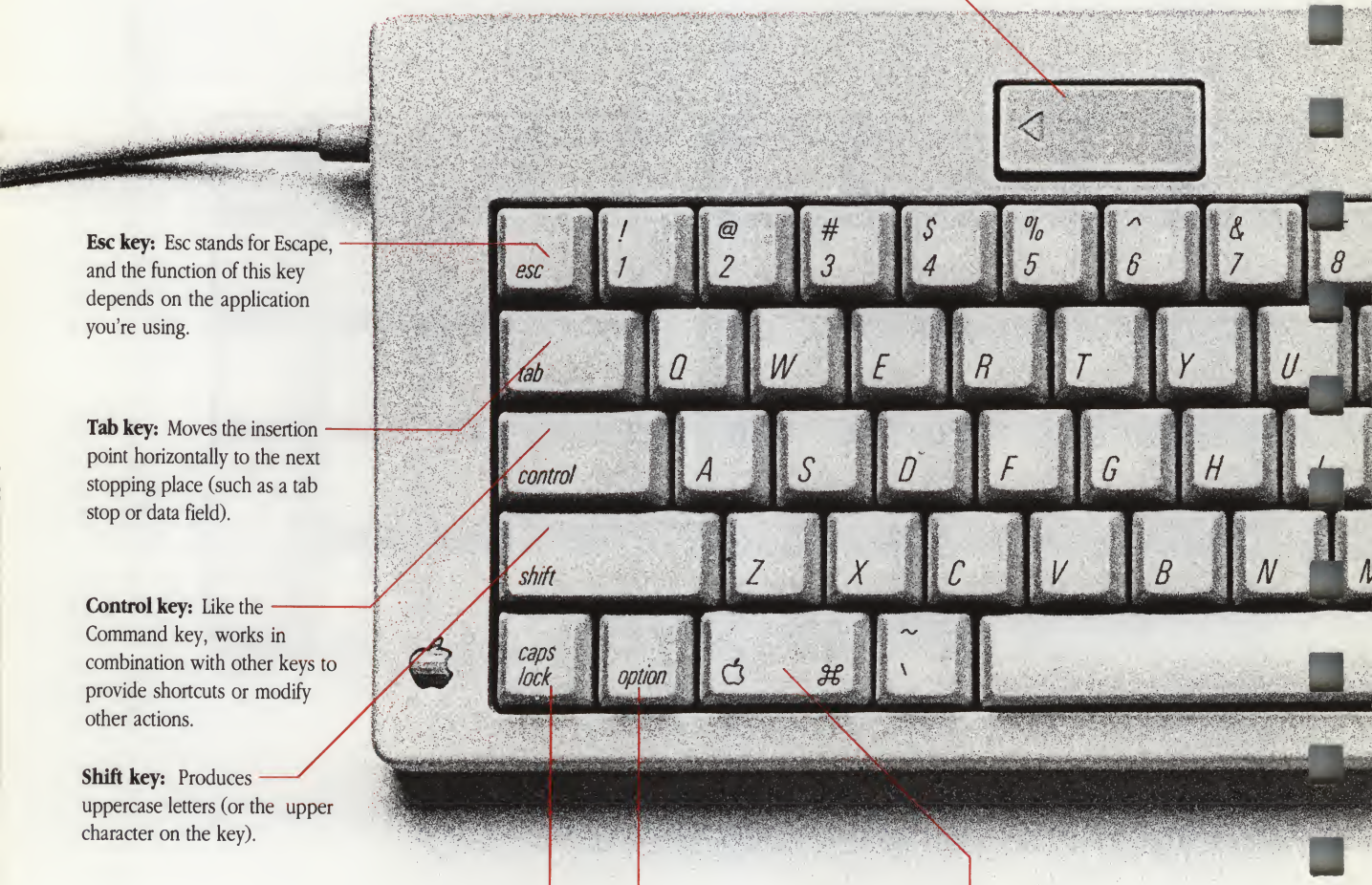
Arrow keys: Use the arrow keys to move the insertion point, as an alternative to using the mouse.

Enter key: In a dialog box, pressing Enter is the same as clicking the outlined button that confirms the default command. Some applications require that you press Enter (not Return) to put data into specific fields.

Backspace key: Deletes any text currently selected, or whatever character is to the left of the insertion point.

Clear key: Deletes the current selection, just as the Backspace key does. In some applications, Clear may have other functions.

Apple Keyboard



Power On key: If you have a Macintosh II, you press this key to turn on your system when it's been turned off.

Esc key: Esc stands for Escape, and the function of this key depends on the application you're using.

Tab key: Moves the insertion point horizontally to the next stopping place (such as a tab stop or data field).

Control key: Like the Command key, works in combination with other keys to provide shortcuts or modify other actions.

Shift key: Produces uppercase letters (or the upper character on the key).

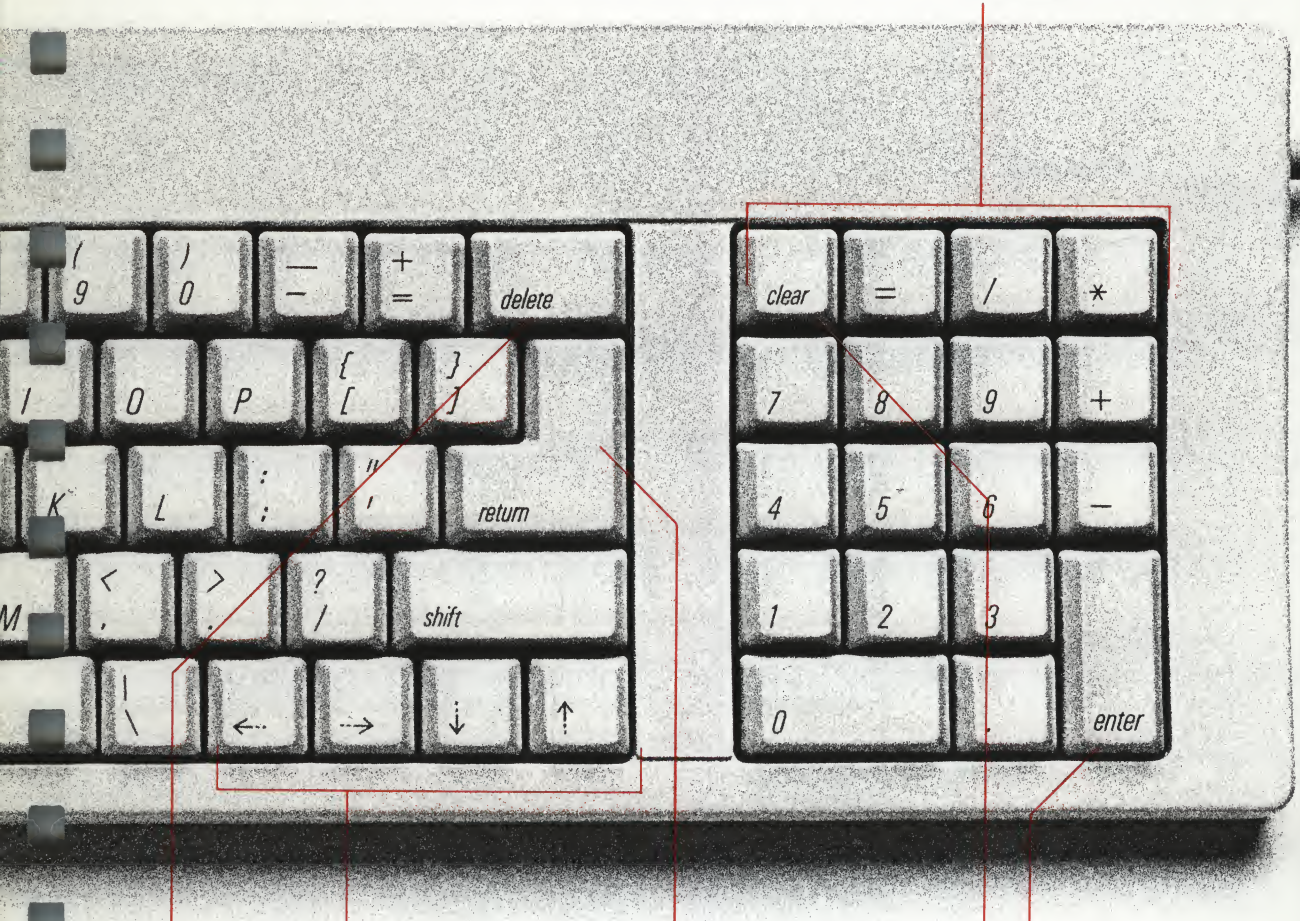
Option key: The Option key in combination with other character keys produces an optional set of special characters.

Command key: The Command key in combination with another key is often a shortcut to choosing a command from a menu or (in some applications) canceling a long operation in progress, such as printing.

Caps Lock key: A Shift key for letters only (numbers and symbols aren't affected).

Figure 6-3
Apple Keyboard

Numeric keys: The arrangement of keys on the numeric keypad matches that on the Calculator desk accessory.



Arrow keys: Use the arrow keys to move the insertion point, as an alternative to using the mouse.

Return key: Moves the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button that confirms the default command.

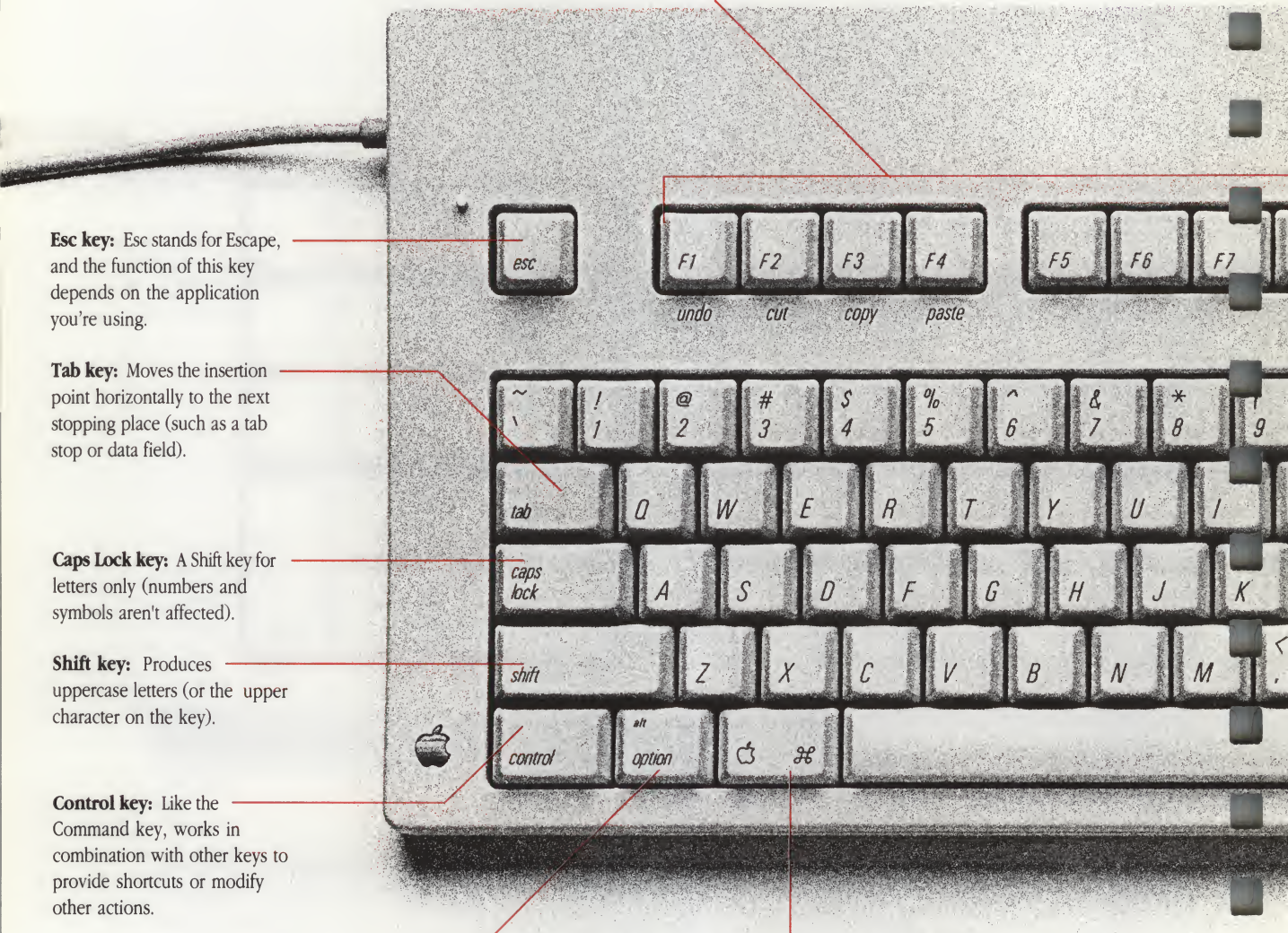
Enter key: In a dialog box, pressing Enter is the same as clicking the outlined button that confirms the default command. Some applications require that you press Enter (not Return) to put data into specific fields.

Delete key: Deletes any text currently selected, or whatever character is to the left of the insertion point.

Clear key: Deletes the current selection, just as the Backspace key does. In some applications, Clear may have other functions.

Apple Extended Keyboard

Function keys: These keys are designed to work in alternative operating systems such as UNIX® or MS-DOS. With the help of the MacroMaker™ utility program, you can also use these keys in the Macintosh operating system to produce recorded characters and commands.



Esc key: Esc stands for Escape, and the function of this key depends on the application you're using.

Tab key: Moves the insertion point horizontally to the next stopping place (such as a tab stop or data field).

Caps Lock key: A Shift key for letters only (numbers and symbols aren't affected).

Shift key: Produces uppercase letters (or the upper character on the key).

Control key: Like the Command key, works in combination with other keys to provide shortcuts or modify other actions.

Option key: The Option key in combination with other character keys produces an optional set of special characters.

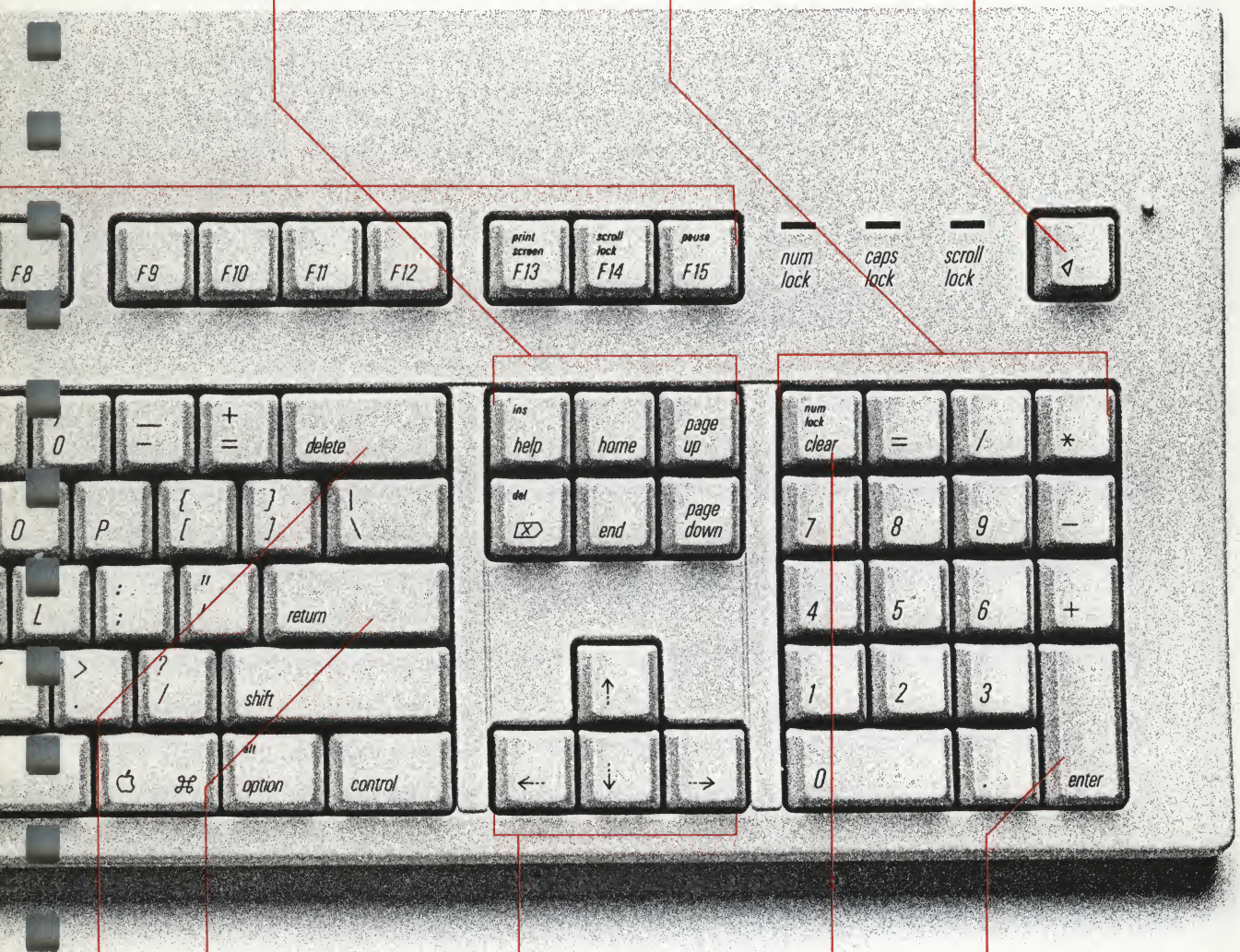
Command key: The Command key in combination with another key is often a shortcut to choosing a command from a menu or (in some applications) canceling a long operation in progress, such as printing.

Figure 6-4
Apple Extended Keyboard

Special keys: These keys are designed to work in alternative operating systems. In most cases, the function of these keys depends on the operating system and application you're using.

Numeric keys: The arrangement of keys on the numeric keypad matches that on the Calculator desk accessory.

Power On key: If you have a Macintosh II, you press this key to turn on your system when it's been turned off.



Return key: Moves the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button that confirms the default command.

Arrow keys: Use the arrow keys to move the insertion point, as an alternative to using the mouse.

Enter key: In a dialog box, pressing Enter is the same as clicking the outlined button that confirms the default command. Some applications require that you press Enter (not Return) to put data into specific fields.

Delete key: Deletes any text currently selected, or whatever character is to the left of the insertion point.

Clear key: Deletes the current selection, just as the Backspace key does. In some applications, Clear may have other functions.

Optional characters

When you press the Option key or Option-Shift, you get optional versions of some characters. Figure 6-5 shows the optional characters in the Chicago font on the Apple Keyboard. If you have a different keyboard, you may have different optional characters available to you; use the Key Caps desk accessory to find out what they are. You can also use the Key Caps desk accessory to see the optional characters in any font installed in the current startup disk's System file. See Chapter 5, "Desk Accessories," for details on using Key Caps.

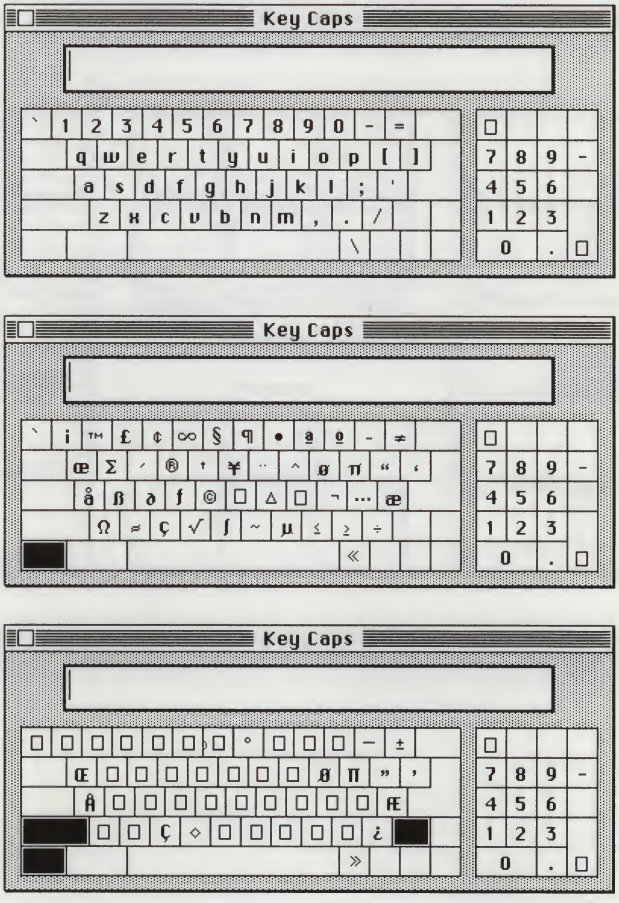


Figure 6-5
Optional characters on the Apple Keyboard

Typing accented characters

Using the Option key with certain other keys lets you enter international language characters.

1. **Determine what accent or diacritical mark you want.**

 Here are some commonly used diacritical marks and the Option-key combinations that produce them:

 - For a grave accent (`) as in *lèvre,* type Option- , then type the character you want to accent.
 - For an acute accent (´) as in *école,* type Option-e, then type the character.
 - For a circumflex (^) as in *maître,* type Option-i, then type the character.
 - For an umlaut (¨) as in *Böblingen,* type Option-u, then type the character.
 - For a tilde (~) as in *mañana,* type Option-n, then type the character.
 - For a c with a cedilla (ç) as in *façade,* type Option-c.

2. **Press and hold down the Option key, then type the accent or diacritical mark you want.**

 In general, typing the Option-key combination (for example, Option-u) produces nothing until you type a character as well. (An exception to this is the c with a cedilla, as in *soupçon.* In this case, typing Option-c gives you the special character directly.)

3. **If necessary, type the character that you want to accent.**

 For example, if you hold down the Option key and press the grave key, then release those keys and type a, you'll get *à*—as in *à la carte.*

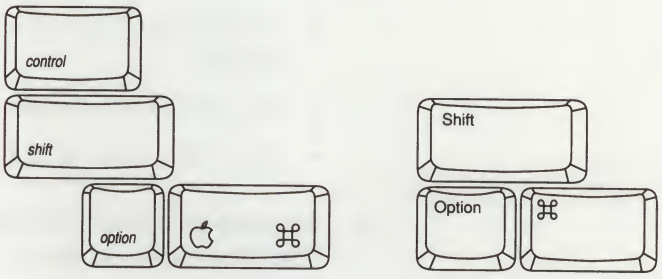
 If for some reason a character can't be accented by the mark you've chosen, you get the mark, followed by the character. Typing the Option-key combination followed by a space gives you the diacritical mark alone.

Easy Access

Easy Access is a new file in your System Folder containing two features, "sticky keys" and "mouse keys." These features assist people with disabilities who have difficulty typing with both hands on the keyboard, or manipulating the mouse. And they're useful to anyone who wants to be able to use the keyboard one-handed, or make very fine movements of the pointer with better control.

Using sticky keys

This Easy Access feature lets you type combination keystrokes, without actually pressing the keys simultaneously, using these "modifier" keys:



Macintosh SE and Macintosh II

Macintosh Plus

Figure 6-6
Modifier keys

Modifier keys only work in conjunction with other keys; they do nothing by themselves. Teamed up with other keys, modifier keys let you take shortcuts or exercise your "power user" know-how.

1. **To turn on the sticky keys feature, press the Shift key five times—without moving the mouse.**

 If the mouse is bumped or moved in any way, it interrupts the Shift-key sequence and you'll have to start over.

Once the sticky keys feature is turned on, you'll see one of three icons at the right end of the menu bar:

- This icon means the multiple-key feature is ON.
- This icon means the modifier key you just pressed is SET. The next key you press will be part of a combination keystroke.

 For example, press the Command key once and you'll see the SET icon. Then type D (a nonmodifier) to complete the Command-D command. The icon will change back to the ON icon. (Typing a nonmodifier releases the SET modifier.)

 When you enter a three-key command (such as Command-Shift-3), the Command key stays SET when you press Shift (a modifier) but is released when you type 3 (a nonmodifier).
- This icon means the modifier key you just pressed twice is LOCKED, useful when you want to use the same modifier to enter several different commands. For example, you might want to do a lot of copying and pasting. Press the Command key twice to LOCK it, then alternate typing C (for Copy) and V (for Paste). To unlock the modifier, simply press it once. The icon will change back to the ON icon.

Any time you press a modifier key, the icon changes to reflect your new options.

2. **To turn off the sticky keys feature, press the Shift key five times again.**

 As an alternative, you can turn the feature off by pressing any two modifier keys at the same time. (The Option-Command combination is handy because the keys are close together.)

Using mouse keys

This feature lets you manipulate the pointer using the numeric keypad on your keyboard instead of the mouse. You can click, drag, and perform all the usual mouse activities; and you'll find that it's easier to make fine adjustments of the pointer with this feature.

1. **To turn on mouse keys, press Command-Shift-Clear.**

 Remember, you can use the sticky keys feature to do this:

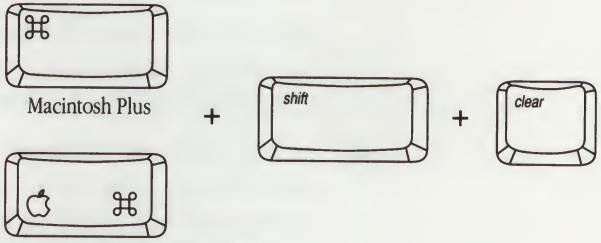


Figure 6-7
Turning mouse keys on

2. **Use the numeric keypad to move the pointer, click, drag, and so on.**

 The number keys around the 5 key move the pointer. (The arrows in Figure 6-8 show direction.) The 5 key operates as the mouse button:

 - Press once to click.
 - Press twice to double-click.

 The 0 key *locks* down the mouse button (for dragging, and so on). The decimal-point key *unlocks* the mouse button.

3. **To turn off the mouse keys feature, press Command-Shift-Clear.**

Some additional tips:

- When you use one of the number keys around the 5 to move the pointer, you'll notice that the longer you press the key, the faster the pointer moves. If it's moving too fast for comfort, choose Control Panel from the Apple menu and change the mouse speed. (Tablet is the slowest speed.)

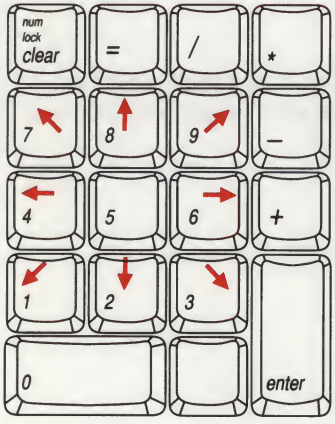


Figure 6-8
Using the numeric keypad with mouse keys on

- For very fine pointer movements (one pixel at a time), press and release the number key for the direction you want to go. (In effect, you "tap" the key.) You'll probably find that what works best is a mix of holding down a key to move the pointer longer distances and tapping a key for fine adjustments.
- When you need to Shift-click, you'll use a combination of sticky keys and mouse keys. First, make sure the sticky keys feature is ON. (Press Shift five times.) With the ON icon in the menu bar, press Shift twice to LOCK it (so you don't have to hold it down). Finally, go to the keypad and press the 5 key to click and select. To extend the selection, use the other number keys to move the pointer where you want it and click as appropriate.

It may take some time to become skilled at using these new features, but with practice you'll find them helpful.

If you don't plan to use these features, you can remove the Easy Access icon from the System Folder on your startup disk, dragging the icon to the Trash. (Please don't do this if the computer is meant for public access.) At a later date, if you change your mind, you can copy Easy Access again from the *Macintosh System Tools* disk into your System Folder. (Easy Access must be in the System Folder or it won't work.)

Menu command shortcuts

On all the menus except the Apple menu (which doesn't show commands, as such) you will see keyboard equivalents for most commands. When there is a Command-key shortcut, you see it in the menu to the right of the command itself. For example, in the Edit menu you see the command Cut, and beside it the Command-key shortcut, ⌘-C.

These shortcuts make it possible for you to issue a command from the keyboard rather than using the mouse to choose the command from a menu. You simply press the Command key and type the character that represents the command you want. When you're doing a lot of typing that involves cutting and pasting, for example, you may find it handy to use the shortcuts.

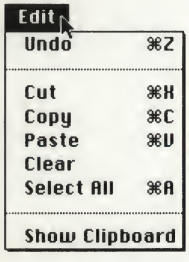


Figure 6-9
Command-key equivalents

Keyboard shortcuts in the Finder

These shortcuts are specific to the Finder. Most of them let you do "expert" functions.

- **Option key.** Holding down the Option key while you choose Close from the File menu closes all open windows.

 If your directory is in an icon view, holding down the Option key while you choose Clean Up from the Special menu will realign the icons in the active window to a grid pattern.

 Holding down the Option key while you double-click a disk or folder icon opens the icon as usual, and you can open an application or document in the resulting window. The shortcut is that once you return to the Finder, the window will be closed and the application or document put away.

- **Command key.** Holding down the Command key while you drag a window moves the window *without making it active.*

 With your directory in an icon view, you can hold down the Command key while you drag and then release an icon. When you release the icon, it will snap into alignment with the grid used by the Clean Up command (in the Special menu).

 Holding down the Command key while you double-click a dimmed icon makes that icon's window active.

- **Option and Command keys.** Holding down the Option and Command keys while you double-click a Finder icon makes the disk that Finder is on become the current startup disk (if it also has a System file on it, and MultiFinder is turned off).

C H A P T E R 7

3.5-Inch Disks

WHO NEEDS THIS CHAPTER?

It's likely that everyone with a Macintosh will need to refer to this chapter from time to time. (All Macintosh computers have at least one 3.5-inch disk drive.)

Obviously, 3.5-inch disks with 800K (or 400K) of storage space cannot hold as much information as hard disks. However, their small size and portability make them ideal when you want to copy a file and mail it to a friend or take a spreadsheet home to work on. You also use these disks to make backup copies of files on your hard disk, if you have one.

What's in this chapter?

This chapter contains information on these topics:

- preparing 3.5-inch disks for use (initializing)
- ejecting 3.5-inch disks
- making copies of 3.5-inch disks
- protecting the contents of 3.5-inch disks (locking)

Different capacities and different formats

Capacity refers to the maximum amount of storage space available on a disk. For example, Apple 3.5-inch disks that are labeled *Double Sided* can store a maximum of 800 kilobytes (800K), or about 160 pages of text per disk. And from time to time you'll come across disks labeled *Single Sided* (or not labeled at all). These are disks on which you can store a maximum of 400K of information.

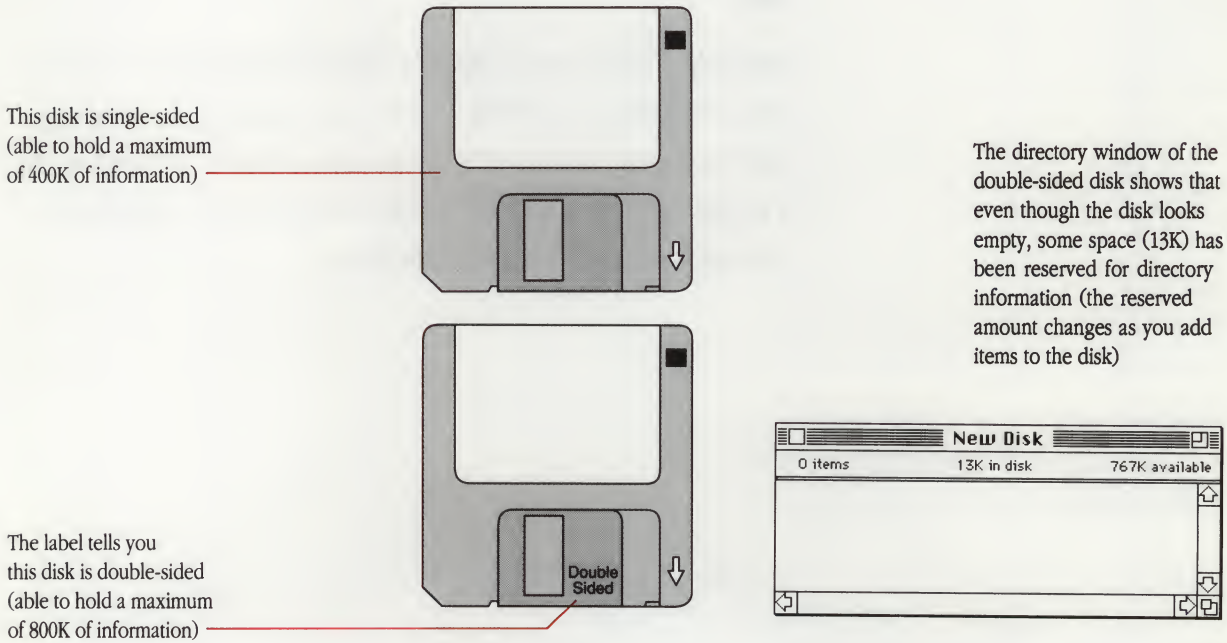


Figure 7-1
Disks with different capacities

Format refers to how you have prepared a disk for use—called **initializing.** A disk with 800K capacity can be initialized with the two-sided format (using all the available space) or the one-sided format. A disk with 400K capacity must be initialized with the one-sided format.

Aside from the capacity and format of the disk itself, another factor in the equation is the capability of the disk drive in which you use the disk. While 800K disk drives are standard with the Macintosh Plus, Macintosh SE, and Macintosh II, older Macintosh computers have 400K disk drives—requiring disks that have been initialized with the one-sided format. An 800K disk drive can use a disk whether it's been initialized with the two-sided or one-sided format, and can use the older-style 400K disks. A 400K disk drive can only use a disk that's been initialized with the one-sided format.

Table 7-1 summarizes which disks you can use in different disk drives.

Table 7-1
Disks and drives

Disk capacity	Disk format	Use in a 400K disk drive?	Use in an 800K disk drive?
400K	One-Sided	Yes	Yes
800K	One-Sided	Yes	Yes
800K	Two-Sided	No	Yes

Preparing 3.5-inch disks for use

Before your Macintosh can get information from or save information onto disks, the disks need to be initialized in a format your computer understands. (A blank disk is like a parking lot without divider lines. Before it can "park the cars," your computer has to "draw in the white lines.") Any time you insert an uninitialized disk or a disk your computer can't read (because it's damaged or it's been initialized for a different kind of computer), a message appears asking you whether you want to initialize the disk for the computer and letting you choose to initialize the disk in the one-sided or two-sided format.

If you are using an application and insert an unformatted disk, most applications allow you to initialize the disk from within the application without losing any information currently in the computer's memory. (During initialization, some messages may use slightly different wording, depending on the application.)

- *False "unreadable" message:* On rare occasions, you may insert an initialized disk that you've been using for some time, and see a dialog box informing you that the disk is unreadable and asking whether you want to initialize it. (Clicking initialize will erase everything on the disk, so you may not want to do that.) Try ejecting the disk (by clicking the Eject button in the dialog box) and reinserting it. If the problem was only a temporary glitch, the dialog box will not reappear.

 If the "unreadable" message appears again, the disk may have been damaged in some way. Try using the Disk First Aid™ utility to repair it. (See the *Macintosh Utilities User's Guide* for details.) Or the problem may be with the disk drive hardware. For example, the disk drive may need to be cleaned. Your authorized Apple dealer can help you with a problem disk drive.

 It is also possible that the disk has sustained serious damage and is simply unusable. Try using it in another disk drive or on another Macintosh. If it still fails, you may have to throw it away.

Initializing both sides of an 800K disk

If you're using 800K disks, you'll usually initialize them with the two-sided format. This gives you the full 800K of available space to store applications and data.

△ **Important** If you initialize an 800K disk with the two-sided format, you *cannot* use it in a 400K disk drive. If you try, you will get a dialog box asking whether you want to initialize the disk with a format the drive can read. Clicking Initialize erases all the information on the disk and initializes it with the one-sided format. △

1. **Insert the 800K disk you want to initialize.**

 A dialog box appears.

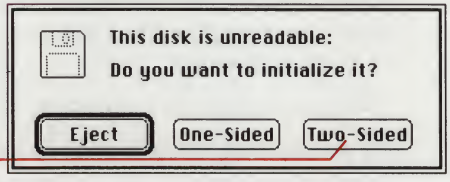


Figure 7-2
Initialization dialog box

2. **In the dialog box, click Two-Sided.**

3. **In the next dialog box that appears, click Erase.**

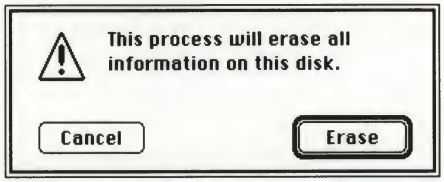


Figure 7-3
Dialog box to confirm that you want initialization to continue

This second dialog box is provided as insurance. You must confirm that you want to proceed, understanding that anything on the disk will be erased during initialization.

4. **Type a name for the disk and click OK.**

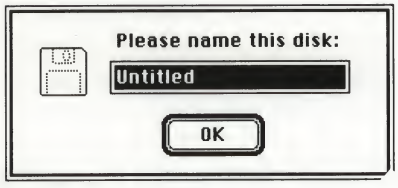


Figure 7-4
Naming a disk during initialization

There are a few restrictions on the names you can give. A disk name can contain up to 27 characters (including spaces). The name can't contain a colon (:), and you shouldn't use a period as the first character. Other than that, you can use any characters you can type on the keyboard.

To avoid confusion, be sure to give disks different names.

If you find you have more than one disk with the same name at any time, you can rename them on the desktop (unless the disk is locked). Renaming a disk works the same way as renaming any icon. See "Renaming an Icon" in Chapter 3.

5. **Wait about a minute for initialization to finish.**

 During the process, you will see a succession of three small status boxes containing these messages:

 - Formatting Disk...
 - Verifying Format...
 - Creating Directory...

 When the final status box disappears, initialization is finished.

Initializing a disk this way installs the hierarchical file system, letting you use folders within an application as well as in the Finder. Whenever you choose Open or Save As, or save an untitled document while you're in an application, you'll see and be able to use folders at different levels in the directory dialog box. See "Working With Folders, Directories, and the Hierarchical File System" and "Working With Documents and Applications" in Chapter 3.

Initializing a disk for use in a 400K disk drive

You can initialize an 800K disk so you can use it in a 400K disk drive. But it makes only half the disk space available to you and doesn't install the hierarchical file system, so you won't be able to see folders in the directory dialog box when you choose Open or Save As from the File menu.

△ **Important** Be sure to initialize 400K disks with the one-sided format. Although the computer will sometimes let you initialize a 400K disk with the two-sided format, the second side of the disk has not been tested for reliability, and you run the risk of losing all the information on the disk. △

1. **Insert the disk you want to initialize.**

 A dialog box appears.

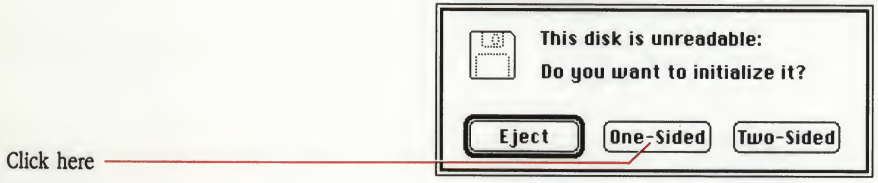


Figure 7-5
Initializing a disk for a 400K disk drive

2. **In the dialog box, click One-Sided.**

3. **In the next dialog box that appears, click Erase.**

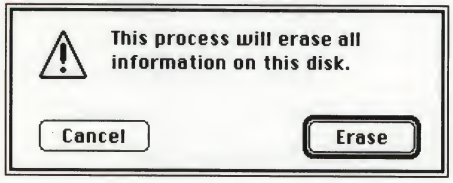


Figure 7-6
Dialog box to confirm that you want initialization to continue

This second dialog box is provided as insurance. You must confirm that you want to proceed, understanding that anything on the disk will be erased during initialization.

4. **Type a name for the disk and click OK.**

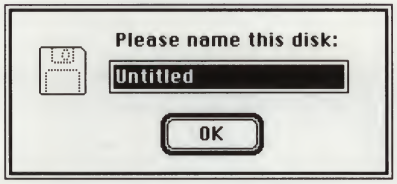


Figure 7-7
Naming a disk during initialization

There are a few restrictions on the names you can give. A disk name can contain up to 27 characters (including spaces). The name can't contain a colon (:), and you shouldn't use a period as the first character. Other than that, you can use any characters you can type on the keyboard.

To avoid confusion, be sure to give disks different names.

5. **Wait about a minute for initialization to finish.**

During the process, you will see a succession of three small status boxes containing these messages:

- Formatting Disk...
- Verifying Format...
- Creating Directory...

When the final status box disappears, initialization is finished.

Reinitializing disks

Sometimes you want to reinitialize a 3.5-inch disk. For example, suppose you have an 800K disk that you initialized one-sided, but now you want to use both sides. Or you may just want to erase a lot of bits and pieces of information you've collected on a disk and start fresh. Reinitializing is as easy as initializing.

1. **Insert the disk you want to reinitialize.**

2. Choose Erase Disk from the Special menu.

A dialog box appears.

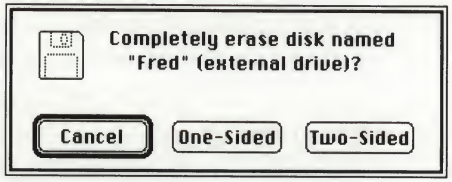


Figure 7-8
Erase Disk dialog box

3. In the dialog box, choose the format you want, One-Sided or Two-Sided.

This erases everything on the disk.

You will not be asked to give the disk a name because it already has one. However, you can rename the disk on the desktop (unless the disk is locked). Renaming a disk works the same way as renaming any icon. See "Renaming an Icon" in Chapter 3.

4. Wait about a minute for the process to finish.

You will see a succession of three small status boxes containing these messages:

- Formatting Disk...
- Verifying Format...
- Creating Directory...

When the final status box disappears, the disk has been erased and reinitialized.

Ejecting 3.5-inch disks

To get information from or save information onto a disk not currently in a disk drive, sometimes you need to eject another disk first. To do this, you can choose the Eject command from the Finder's File menu or drag the disk to the Trash. Your decision determines what remains on the desktop for the Finder to manage.

If the computer needs an ejected disk later, it will ask for it.

Using the Eject command in the Finder

1. **Select the icon that represents the disk you want to eject.**

 If you've opened the disk icon, you can also select it by clicking its directory window (making the window active).

2. **Choose Eject from the File menu.**

 The disk will be ejected and a dimmed icon will stay on the desktop. If you have a single 3.5-inch drive and want to copy files from one disk to another, this is the way to eject.

 Even if no disk has been selected, choosing Eject usually ejects a disk (if one is inserted and it's not a hard disk). The Finder looks for an inserted disk to eject.

△ **Important** Occasionally, a disk will eject only part way and will resist being pulled out of the disk drive. If this happens, do *not* forcibly remove the disk. Push it back into the disk drive and try ejecting it again. △

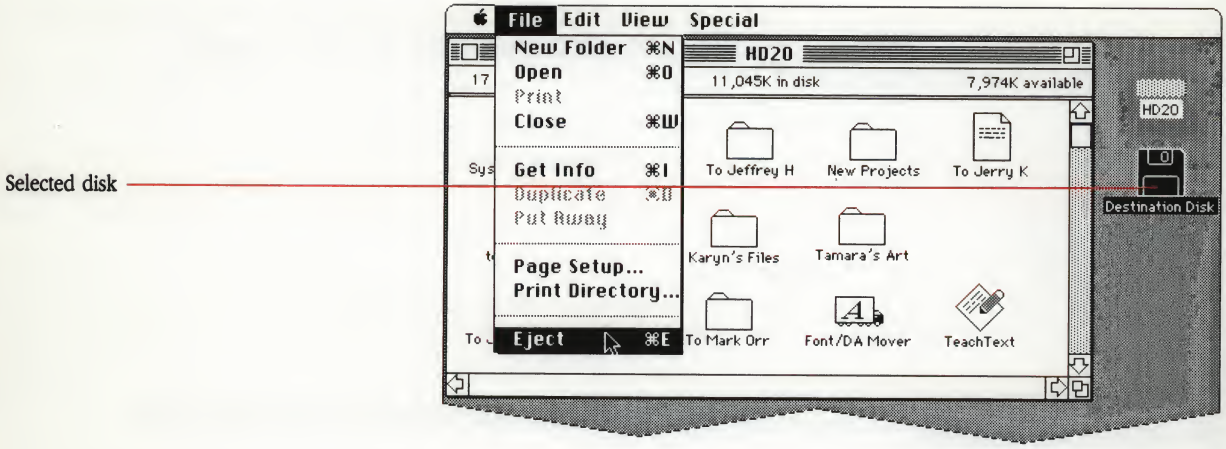


Figure 7-9
Choosing the Eject command

Nothing on the disk is erased, and the Macintosh will remember the information it needs about the ejected disk as long as its dimmed icon is visible on the screen.

If you try to open any dimmed icons related to a disk you've ejected this way, an alert box tells you to reinsert the disk.

You can drag a dimmed icon just as you would an icon that's not dimmed.

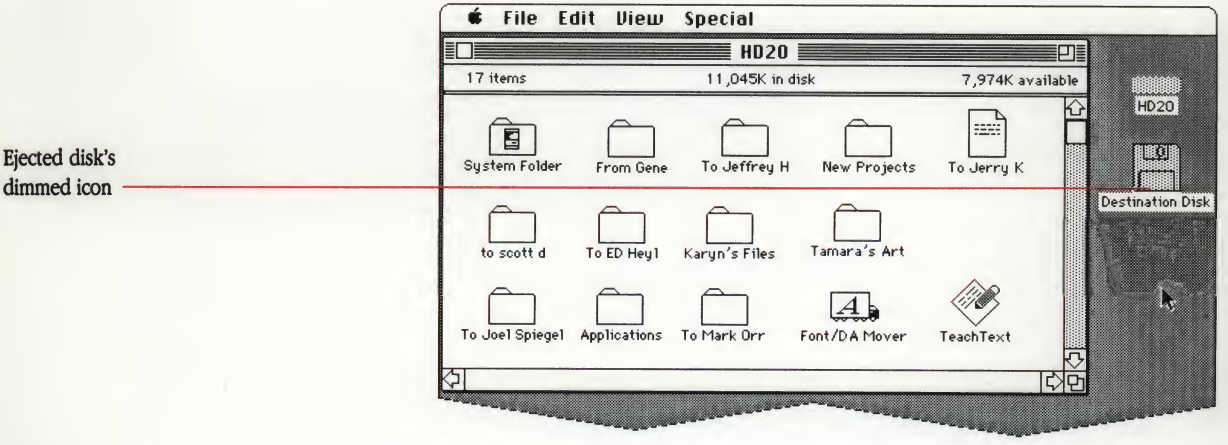


Figure 7-10
Results of using the Eject command

As long as the ejected disk's icon remains on the desktop, the Finder will ask you to reinsert the ejected disk any time it is needed.

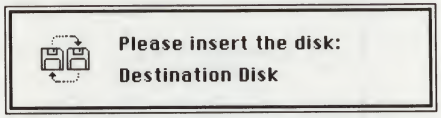


Figure 7-11
Message requesting that you reinsert an ejected disk

Dragging a 3.5-inch disk to the Trash

1. **Drag the icon of the disk you want to eject to the Trash.**

 Make sure the tip of the pointer is over the Trash icon (and the icon itself is highlighted).

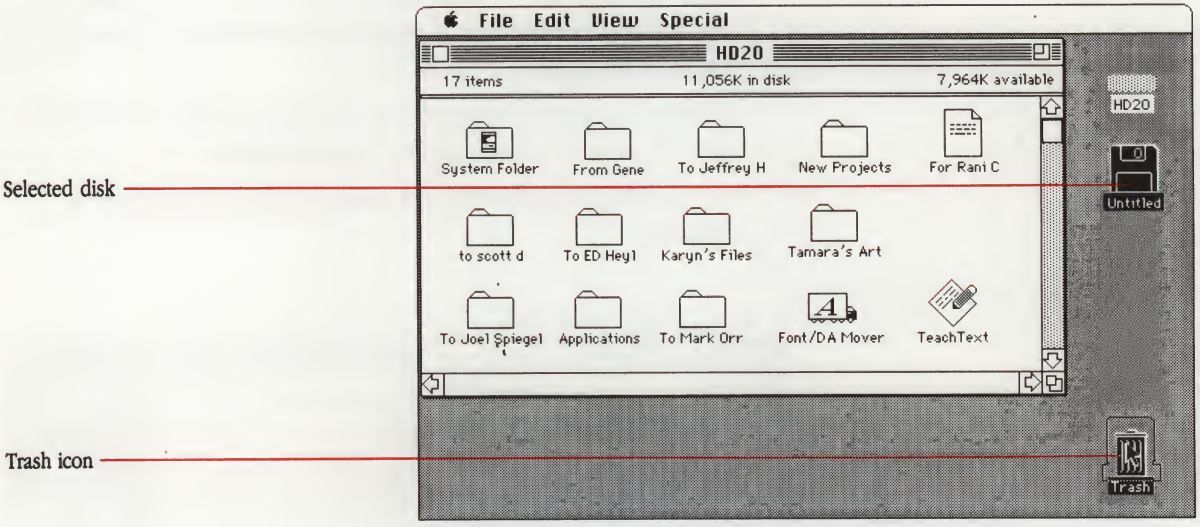


Figure 7-12
Dragging a disk to the Trash

2. **Release the mouse button.**

The disk will be ejected and its icon will be removed from the desktop. The Finder forgets that the disk was inserted, and many times that's exactly what you want.

Nothing on the disk is erased.

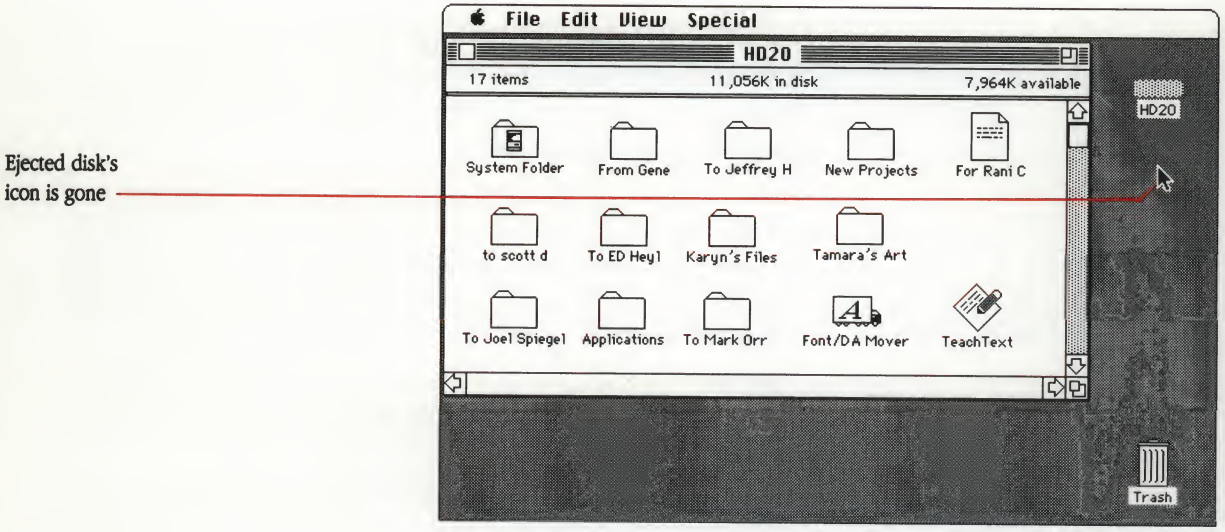


Figure 7-13
Results of dragging a disk to the Trash

- *Exception:* If there are any files open on the disk icon you drag to the Trash (for example, if it's the current startup disk with the Finder and System files open), its dimmed icon will remain on the desktop. You will not be able to remove or open the icon without reinserting the disk. (But you can choose Restart or Shut Down from the Special menu, insert another startup disk, and restart the computer. For more information, see "Switching Startup Disks" in Chapter 9.)

Other ways to eject 3.5-inch disks

Choosing Restart or Shut Down from the Special menu ejects all inserted disks (and their icons).

You can use combination keystrokes to select and eject specific disks:

- To eject a disk from drive 1, press Command-Shift-1.
- To eject a disk from drive 2, press Command-Shift-2.
- To eject a disk from a third drive, press Command-Shift-0.

These shortcuts do leave a dimmed icon on the desktop. (The Finder remembers the disk and will ask for it if necessary.) To avoid this, eject the disk by dragging it to the Trash.

❖ *Stuck disk?* On rare occasions, you may encounter a problem with a 3.5-inch disk that won't eject with any of these techniques. As a last resort, switch off the Macintosh. Press and hold down the mouse button while you switch the computer on again. Keep pressing on the mouse button until the disk is ejected, then release the mouse button.

Another trick is to insert an object such as a straightened paperclip into the small hole just to the right of the disk drive opening. Press gently to trigger the eject mechanism.

Neither of these techniques is an ideal way to eject a disk because the Macintosh will not be able to save the information on the current status of that disk before it is ejected. The next time you insert the disk, the Finder will take some time to identify and update the directory.

Sometimes a problem ejecting a disk may be a symptom of actual damage to the disk. If that is the case, it may not be usable as is, and you will have to reinitialize the disk, erasing its current contents.

Making copies of 3.5-inch disks

You'll find that you want to copy disks for different reasons at different times. You should always make backup copies of application disks and any disk that contains essential information (for example, the *Macintosh System Tools* and *Macintosh Printing Tools* disks that came with your computer). That way, if the working copy is damaged in any way, you still have the master disk and can make another copy.

Copying a 3.5-inch disk to a hard disk

If you have a hard disk, you'll copy information from 3.5-inch disks to your hard disk.

1. **Insert the disk you want to copy (the source disk) into a disk drive.**
2. **Drag the icon of the source disk to the icon of the hard disk you want to copy to.**

 A dialog box appears.

Click here to copy the source disk to your hard disk

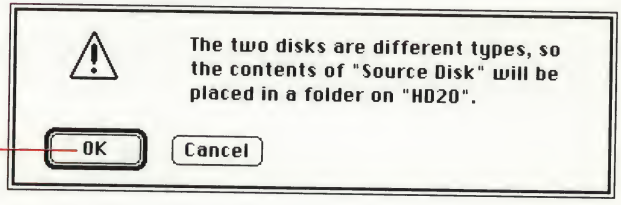


Figure 7-14
Dialog box to confirm that you want to copy to a hard disk

3. **Click OK.**

 When the destination disk is a hard disk, items with the same name on the hard disk aren't replaced. Instead, the system creates a folder with the name of the source disk, and all its contents are copied into that folder.

△ Important Having more than one System Folder on a disk can cause problems. (A startup disk is the only disk on which you need a System Folder.) When you use this technique to copy the contents of a 3.5-inch disk onto a hard disk, make sure you haven't added an extra System Folder to your hard disk. Open the folder representing the disk you copied and check for the presence of a System Folder. If one is there, drag it to the Trash. △

Copying a 3.5-inch disk to another 3.5-inch disk

You can copy any 3.5-inch disk whenever you can see both its icon (called the source disk icon, because it contains the information you want to copy) and the icon of the disk you want to copy to (called the destination disk icon, because it's where the information is going).

There are two ways to copy one 3.5-inch disk to another 3.5-inch disk. The difference depends on whether you have a hard disk or not.

To copy with a hard disk as intermediary

If you have one 3.5-inch disk drive and a hard disk, you can use the hard disk as intermediary when copying one 3.5-inch disk to another. This helps you avoid some disk swapping. (It is also possible to do this kind of copying without using the hard disk at all. For details, see "If You Have a Single 3.5-Inch Disk Drive," later in this section of the manual.)

1. **Insert the source disk (the disk you want to copy) into the 3.5-inch disk drive.**

2. **If it's not already open, select the hard disk icon and choose Open from the File menu.**

 You can also double-click the icon to open it.

3. **Drag the icon of the source disk to the directory window of your hard disk.**

 A dialog box appears.

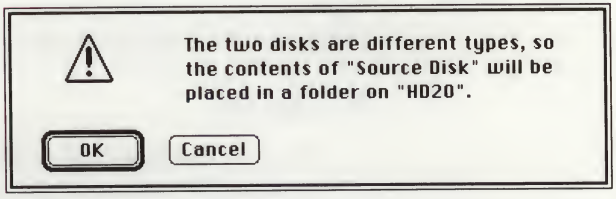


Figure 7-15
Dialog box for copying a 3.5-inch disk to a hard disk

4. **Click OK.**

A few seconds will pass while the copy is being made. When the copy is complete, a folder icon with the name of the source disk appears in the directory window.

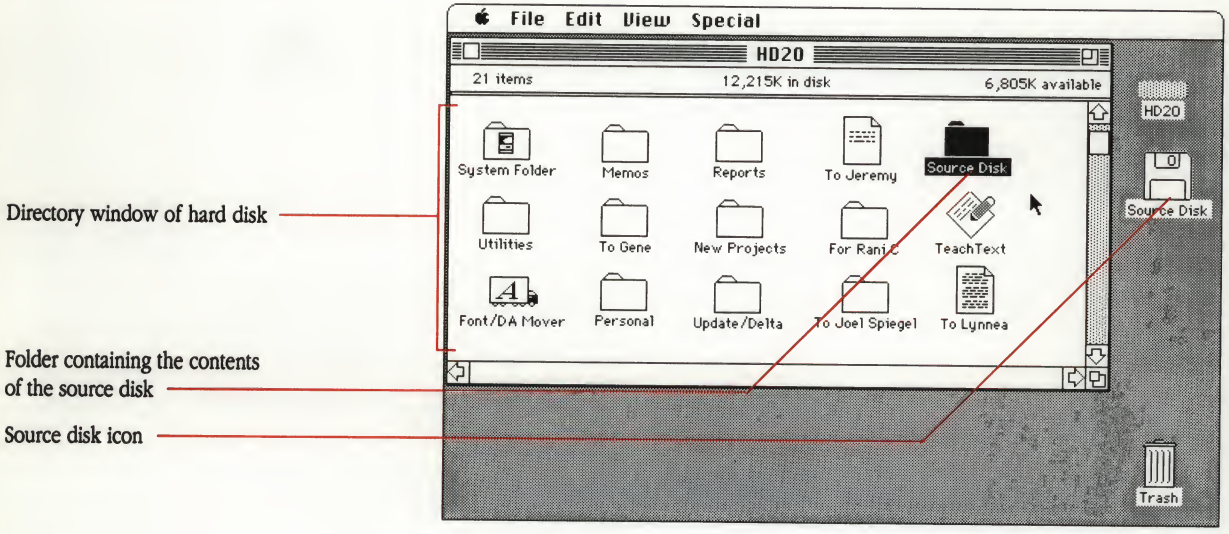


Figure 7-16
Copying a source disk to a hard disk

5. **Eject the source disk by dragging its icon to the Trash.**

6. **Insert the 3.5-inch destination disk (the disk you want to copy to) into a disk drive.**

If the destination disk is brand-new, you'll be asked whether you want to initialize it. You do. (If you're not sure how to initialize, see "Preparing 3.5-Inch Disks for Use," earlier in this chapter.)

7. **Drag the folder containing the source disk's contents to the icon of the destination disk.**

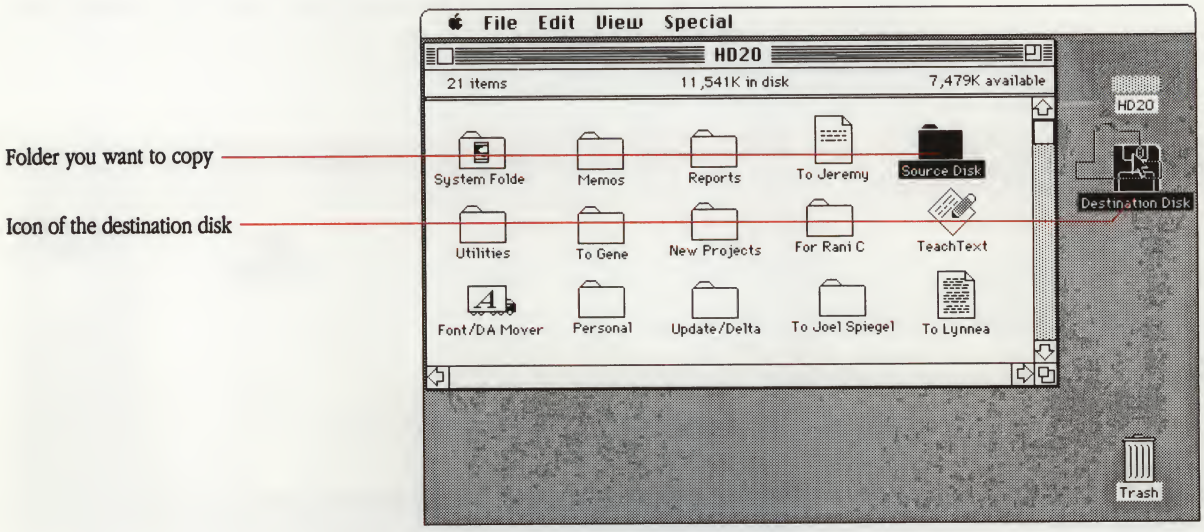


Figure 7-17
Copying from a hard disk to a 3.5-inch destination disk

8. **In the dialog box that appears, click OK.**

 The folder and its contents will be copied onto the destination disk. You can drag the contents out of the folder and discard the empty folder if you want to.

When the copying process is finished, eject the destination disk. It is now a copy of the original source disk. If it's a backup copy, put it in a safe place.

Your hard disk still shows the folder containing the contents of the source disk. If you have no use for the copy, drag it to the Trash.

To copy with two 3.5-inch disk drives and no hard disk

1. **If necessary, first eject any irrelevant disks.**

 You want to empty both disk drives so you can insert the destination disk you're copying to and the source disk you're copying from.

 If there is another disk in the way, select its icon and drag it to the Trash. (Or you can select it and choose Eject from the File menu. However, this technique leaves a dimmed icon on the screen that may be distracting. At times like this you can see the usefulness of giving disks distinctive names.)

2. **Insert both the source disk and the destination disk.**

 If the destination disk is brand new, you'll be asked whether you want to initialize it. You do. (If you're not sure how to initialize, see "Preparing 3.5-Inch Disks for Use," earlier in this chapter.)

3. **Drag the source disk icon to the destination disk icon.**

 You'll see a dialog box asking you to confirm that you want to replace the existing contents of the destination disk with the contents of the source disk. This happens even when you know that the destination disk is blank—as insurance against mistakes in dragging disk icons, for example.

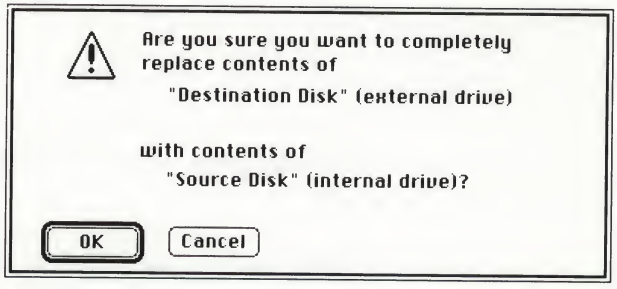


Figure 7-18
Dialog box to confirm that you want to copy the disk

In this dialog box, the disk drive specified in parentheses—for example, "(external drive)"—will change depending on where you actually insert each disk. If you have a Macintosh SE or a Macintosh II with two internal 3.5-inch disk drives, both disks will be identified as being in internal drives.

4. **Click OK.**

 The copying process will begin. The Macintosh erases everything on the destination disk and replaces it with the contents of the source disk.

 - *Can't copy?* When there's not enough room on the destination disk—if you're trying to copy a filled 800K disk to a disk with the one-sided format, for example—the computer will tell you so. Eject the 400K destination disk and insert a disk with the two-sided format in its place.

If you have a single 3.5-inch disk drive

You can copy one 3.5-inch disk to another with a single 3.5-inch drive, although it requires some disk swapping. (In fact, you can use this technique on a Macintosh with a single 3.5-inch disk drive and a hard disk.)

If necessary, eject any irrelevant disk currently in the 3.5-inch drive. Insert the destination disk first; then select its icon and choose Eject from the File menu. This will eject the disk and leave its dimmed icon on the desktop. (Because you are copying one disk to another, you need to see the dimmed icon.) Then insert the source disk and drag its icon to the dimmed icon of the destination disk. The Macintosh will ask you to confirm that you want to replace the existing contents of the destination disk with the contents of the source disk. Click OK. You'll see messages telling you to exchange one disk for the other, as needed, until the copy is complete.

Protecting the contents of 3.5-inch disks

You can prevent any information on a 3.5-inch disk from being changed by **locking** the disk. (You can also lock specific documents and applications—and folders, if you're using the AppleShare® file server—by choosing Get Info from the File menu. See "Locking a Document or Application" in Chapter 3 for instructions.)

Locking a 3.5-inch disk

1. **Looking at the back of the disk, with the metal end away from you, notice the colored tab in the lower right-hand corner.**

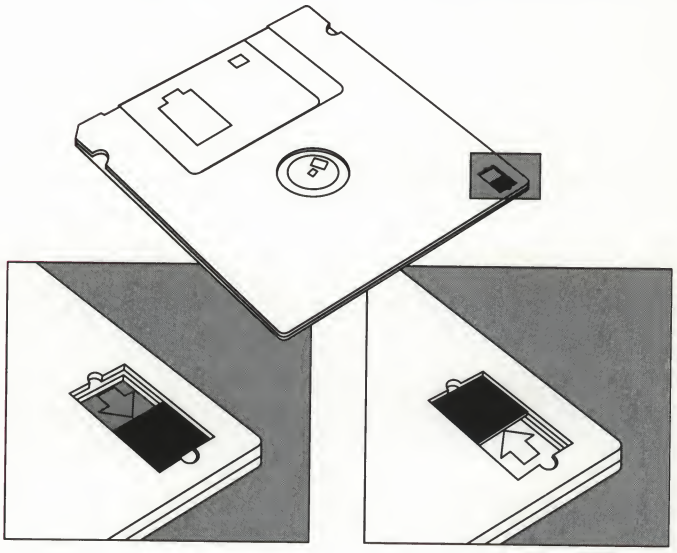


Figure 7-19
Locking and unlocking a disk

2. **To lock the disk, slide the colored tab toward the outer edge of the disk (revealing a small hole).**

When a disk is locked, you can't add new information to it or change any information on it. You can open (and usually print) the documents it contains, but you won't be able to save, delete, rename, move, duplicate, or edit any information on it.

- *Locked disks and applications:* Some applications might not work with a locked disk, and the Finder can't remember anything you've done on the desktop when you're using a locked disk. Some desk accessories might not work properly if the current startup disk is locked.

CHAPTER 8

Hard Disks

WHO NEEDS THIS CHAPTER?

If your Macintosh has a hard disk drive, this chapter tells you how to prepare it for use and keep it in good running order.

Some of the newer Macintosh computers come with SCSI hard disks. (SCSI is an acronym for Small Computer System Interface, and is commonly pronounced "SKUH-zee.") If you have a SCSI hard disk and want to initialize it, you'll find the instructions you need here. And whether you have a SCSI or non-SCSI hard disk, in the last part of this chapter you'll find some helpful tips on working with a hard disk.

What's in this chapter?

This chapter contains information on these topics:

- preparing a SCSI hard disk (initializing and reinitializing)
- getting the most out of your hard disk

A hard disk lets you work more quickly and more efficiently. You work more quickly with a hard disk because it transfers information to and from your computer's main memory much faster than a 3.5-inch disk does—cutting down on waiting time. You work more efficiently with a hard disk because you can store large amounts of information on it. (A 20 MB hard disk holds about 25 times as much as you can store on an 800K disk.)

You work with a hard disk and a 3.5-inch disk in the same way: opening a hard disk icon, copying applications and documents, and organizing information in folders are identical. In fact, the only real difference is that you can't eject a hard disk. You can think of the hard disk as an oversized 3.5-inch disk that always stays in its drive.

To prepare your hard disk for use, you need to initialize it. Then, to make it your startup disk (the disk from which your computer will start when you switch on the power), you need to install the system software.

Preparing a SCSI hard disk for use

Initializing a SCSI hard disk prepares the disk to store information and installs the driver resource, a file that tells your computer how to work with the hard disk.

△ **Important** Someone else may have already prepared the hard disk for use. Unless it was prepared for you by someone in your work group, you'll have to decide whether to initialize the hard disk again. Reinitializing a disk wipes out any information stored on it.

To see if your hard disk has already been prepared, insert a startup disk into a 3.5-inch disk drive and switch on the Macintosh. (If the computer is already on, choose Shut Down from the Special menu, insert the startup disk, and restart the Macintosh.) In a few seconds, if you see the hard disk's icon on the Finder desktop, the hard disk has been initialized. You can decide whether you want to reinitialize it. △

- *External hard disk drive:* If you have an external SCSI hard disk, it may need to be set up, too. The procedures are the same for both internal and external Apple SCSI hard disks. To prepare a non-Apple hard disk, follow the instructions in the manual that came with it.

Initializing a SCSI hard disk

1. **With your Macintosh turned on, choose Shut Down from the Special menu.**

 This ejects any 3.5-inch disks you may have inserted.

 If you have a Macintosh Plus or Macintosh SE, the screen will become dark, and a dialog box will appear with a Restart button.

 If you have a Macintosh II, the Shut Down command has completely turned off the power to your system.

2. **Insert the *Macintosh System Tools* disk and restart the computer.**

 If you have a Macintosh Plus or a Macintosh SE, click the Restart button on the screen.

 If you have a Macintosh II, press the Power On key (on the keyboard) to start the computer again.

 After a few seconds, you see the System Tools disk icon on the desktop.

3. **Open the System Tools icon.**

 Select the icon and choose Open from the File menu. (You can also double-click an icon to open it.)

 In the System Tools directory window, find the Setup Folder.

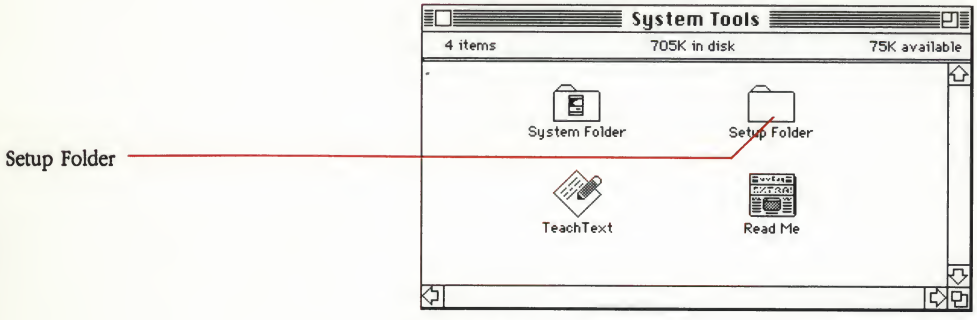


Figure 8-1
System Tools directory window

4. Open the Setup Folder.

Among some other icons, you see the Apple HD SC Setup icon. This is the utility you use to initialize a SCSI hard disk.



Figure 8-2
Setup Folder directory window

5. Open the Apple HD SC Setup icon.

The Apple HD SC Setup dialog box appears:

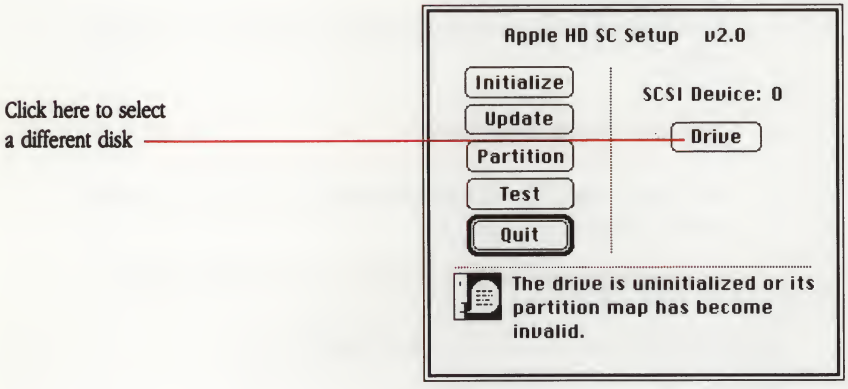


Figure 8-3
Apple HD SC Setup dialog box

6. **If necessary, click the Drive button to select the disk you will initialize.**

 Make sure the disk drive named in the dialog box is the hard disk you want to initialize. If it's not the correct name, click Drive until the name you want appears.

 If the drive you want doesn't show up at all, check the cable connections and the position of any SCSI terminators. (See your Macintosh owner's guide for details.)

7. **Click Initialize.**

 Another dialog box appears, giving you a chance to change your mind; it warns you that the initialization process erases the whole disk.

8. **Click OK to start the process.**

 As the hard disk begins operating, various messages appear on the screen, explaining what's going on in the meantime. The initialization process takes about five minutes for a 20 MB hard disk drive.

 A message tells you when the hard disk has been successfully initialized.

 ❖ *Problem?* If you see a message that the hard disk failed to initialize properly, try again. If you are still unable to initialize the hard disk, turn to Appendix B, "Troubleshooting," for help.

 If the troubleshooting tips don't solve the problem, get help from a more experienced Macintosh user or contact your authorized Apple dealer or representative.

9. **Name the disk and click OK.**

 After your hard disk is initialized, a dialog box appears, asking you to give your hard disk a name. The name can have up to 27 characters, including spaces. You can use any character except a colon (:), and don't begin the name with a period (.) or a space.

10. Click Quit.

You return to the Finder, and you see the hard disk icon on the right side of the desktop with the name you've given it.



Figure 8-4
Initialization completed

- *The next step:* As soon as your disk has been initialized successfully, you must install the system software so you can begin to use the hard disk as your startup disk. See Chapter 9, "Startup Disks," for instructions on using the Installer to create a startup disk.

Reinitializing a SCSI hard disk

If you have inherited a Macintosh with an internal or external Apple SCSI hard disk that someone else has used for a while, you may want to clean it up and start fresh. To do this, you use Apple HD SC Setup exactly as you would to initialize a brand new hard disk. (Go back to the beginning of the previous section, "Initializing a SCSI Hard Disk.")

- *Do you want to save anything?* Before you reinitialize the disk, check the contents to see whether you want to save a copy of anything that's already on the disk. For example, there may be applications or documents you will find useful. If there are only a few items you want to copy, you can drag their icons to 3.5-inch disks and save them that way.

 If you decide that what you want to save is more substantial, you may want to use the HD Backup utility (explained in the *Macintosh Utilities User's Guide*). Another possibility is to use an Apple Tape Backup 40SC if one is available. See the manual that came with the equipment for instructions on its use.

Other Apple HD SC Setup functions

The Apple HD SC Setup dialog box has six buttons. You already know about the Initialize and Quit buttons; the other four (Update, Partition, Test, and Drive) let you perform maintenance functions on your hard disk.

Update

From time to time, Apple Computer releases improved versions of system software. Your authorized Apple dealer or representative can tell you when a system software update becomes available. Updating your hard disk software gives you improved performance without any risk to the information already stored on the disk. Click the Update button to install updated driver resources on the hard disk.

You can also use this button to reinstall the driver resource if it becomes damaged. (If the driver is damaged, the disk's icon won't appear on the desktop, and the disk won't work as a startup disk.)

- *Different versions of Apple HD SC Setup:* Apple HD SC Setup version 2.0, which came with this manual, makes it possible to partition hard disks. Because of this important change, version 2.0 is not compatible with earlier versions.

 This means that you cannot use the Update button to update a hard disk that has been initialized already with version 1.5 of Apple HD SC Setup, or earlier versions. (You'll get a message telling you that you cannot update.) Instead, you must completely reinitialize the hard disk if you want to take advantage of the features in the latest driver resources. (Reinitializing erases the disk. Before you reinitialize, you may want to make backup copies of what's on the hard disk.)

Partition

You can use Apple HD SC Setup to divide your hard disk into **partitions.** This is an advanced feature that you will use only if you plan to store information from other types of computers or different operating systems on your SCSI hard disk. For example, you might use the Macintosh operating system on one half of the disk and reserve the other half for the A/UX® operating system (created at Apple for the Macintosh), a version of AT&T's UNIX®. You'll find complete instructions for creating partitions in the *Macintosh Utilities User's Guide.*

Test

Click the Test button to start a test of your hard disk. The test takes about four minutes, and it checks to make sure your hardware is working properly. (It doesn't check any software, and it has no effect on information you've stored on the disk.)

You can run the test whenever you want. In fact, it makes sense to run this test once a month or so to make sure that everything is working properly. (Sometimes this test can spot a problem before it becomes obvious, and before any of your information is affected.)

If your hard disk fails the test, try to back up any files you want to save. If the backup process fails, run the Disk First Aid utility and try to back up the files again. (You'll find instructions for using Disk First Aid in the *Macintosh Utilities User's Guide.*) If the disk fails the test a second time, reinitialize it (which will erase everything on the disk and reformat it). If it still fails after reinitialization, stop using the disk and contact your authorized Apple dealer or representative.

Drive

In the initialization procedure, you click the Drive button when you want your Macintosh to search for the next available SCSI disk drive. However, letting you select the disk is not the only purpose of this button.

If you have more than one SCSI hard disk attached to your Macintosh, the Drive button also tells you the device priority number for each Apple SCSI drive it finds. (When you turn on your Macintosh, device priority determines which disk the computer looks for first, second, and so on.) The device priority number identified here is simply for your information; you cannot change the device priority from this dialog box. For instructions on changing the device priority number for an external SCSI hard disk, see the manual that came with the disk. (Internal hard disk drives are always priority 0.)

- *If you have a non-Apple SCSI disk drive:* The Drive function may not include any non-Apple SCSI disk drives in the search. And future updates to system software cannot be guaranteed to work on all non-Apple hardware.

See Appendix C, "SCSI Cables and Terminators," in your Macintosh owner's guide for more information about SCSI devices and important instructions on connecting SCSI devices to your system.

Getting the most out of your hard disk

While you can approach using your hard disk as though it were a big 3.5-inch disk, there are certain precautions you should take.

- **Organize your files carefully.** Hard disks let you keep large numbers of applications, documents, and other files a mouse click away. But without careful organizing, files can become buried in layers of folders. Be sure to organize your files into folders in a way that makes your job easier, not harder. And if you happen to file a document or application in the wrong place, the Find File desk accessory can help you locate it. (See the *Macintosh Utilities User's Guide* for information about installing and using Find File.)

- **Leave the disk on during long work sessions to minimize wear.** While your hard disk has been designed to give you thousands of hours of trouble-free use, you can extend its life considerably if you avoid shutting it down every time you take a break. As a general rule, don't turn off a hard disk unless you expect to be away from it for at least eight hours. And it doesn't harm the disk to leave it running for long periods of time. Running causes less wear and tear than frequent restarts.

- **Always choose Shut Down from the Special menu before switching off your computer.** When you choose Shut Down, the computer is able to put everything away safely and update directory information before you switch off the system. Your Macintosh will start faster the next time you switch it on—another advantage of using Shut Down.

 Turning off the computer without using Shut Down can cause the disk to lose information, and restarting the computer will take longer. Sometimes it can damage the disk directory. If this happens, use the Disk First Aid utility. (Instructions are in the *Macintosh Utilities User's Guide.*) Another possible remedy is to restart your computer from a different startup disk (for example, a 3.5-inch startup disk inserted into a disk drive, or another hard disk).

- **Back up everything.** Backing up means making an extra copy of a disk or file. Having a backup copy is your insurance policy against damage to the original. Hard disks are reliable, but accidents do happen, and if you value the time you spent creating and revising documents, you'll take the extra time to back up your work.

 Some people back up information stored on their hard disks weekly; more prudent people back up their work on a daily basis. The important thing is to make backup copies regularly. Copy individual documents from your hard disk to 3.5-inch disks just as you would copy documents from one disk to another. Use the HD Backup program on the *Macintosh Utilities* disk 1 to back up large groups of documents. You'll find instructions in the *Macintosh Utilities User's Guide.* If you have an Apple Tape Backup 40SC available, you can use that.

- **If you have problems using the hard disk, see Appendix B, "Troubleshooting."** Appendix B provides solutions to problems that you may occasionally experience when using your hard disk. If you have a problem that you cannot fix, see your authorized Apple dealer or representative.

C H A P T E R 9

Startup Disks

WHO NEEDS THIS CHAPTER?

When you want to create or update a startup disk by installing system software, you'll find the step-by-step procedure described in this chapter. If you're curious about what makes a disk a startup disk, wonder about customizing your startup disk, or want to learn how you can switch from one startup disk to another, you'll find information on those topics here, too.

What's in this chapter?

These are the topics covered in this chapter:

- what a startup disk is (including an explanation of the System Folder and differences between hard and 800K startup disks)
- creating or updating startup disks
- scanning order for startup disks
- switching startup disks
- customizing startup disks
- making a startup disk a nonstartup disk
- reclaiming space on an 800K startup disk

What is a startup disk?



Figure 9-1
What you see when there's no startup disk

A **startup disk** is any disk that contains a group of special files stored in the System Folder. Your computer simply cannot operate without the information in these files. Every time you switch on your Macintosh, it scans the available disk drives for a startup disk. If the computer can't find the folder and the files it needs, you'll see one of the icons shown in Figure 9-1. The X means that the Macintosh has found a disk, but it's not a startup disk. The question mark means that the Macintosh can't find a disk at all.

When you have a startup disk and use it to start your computer, it becomes the current startup disk and appears at the top-right corner of the desktop.

A disk icon here always represents the current startup disk

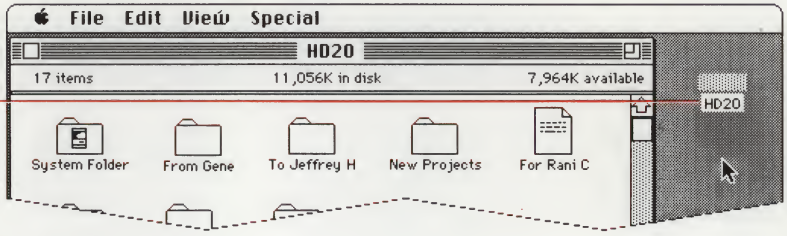


Figure 9-2
Current startup disk

What's inside a System Folder?

On some startup disks a System Folder can contain more than two dozen different icons (depending on which version of the Macintosh and what other equipment you have). Yet, at its most basic, a startup disk is any disk that has a System Folder with a System file and Finder file stored in it.

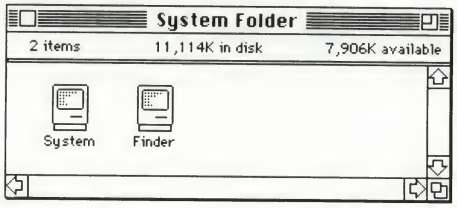


Figure 9-3
A minimal startup System Folder

The fact is, though, that the additional items in a full-blown System Folder offer a variety of features that most users find essential. For example, a typical System Folder will contain ImageWriter or LaserWriter printing resources so you can print your documents, Control Panel resources so you can adjust the speaker volume or mouse tracking speed, and so on. Figure 9-4 shows the System Folder on a startup disk for a Macintosh II with a color monitor and a LaserWriter printer connected to it.

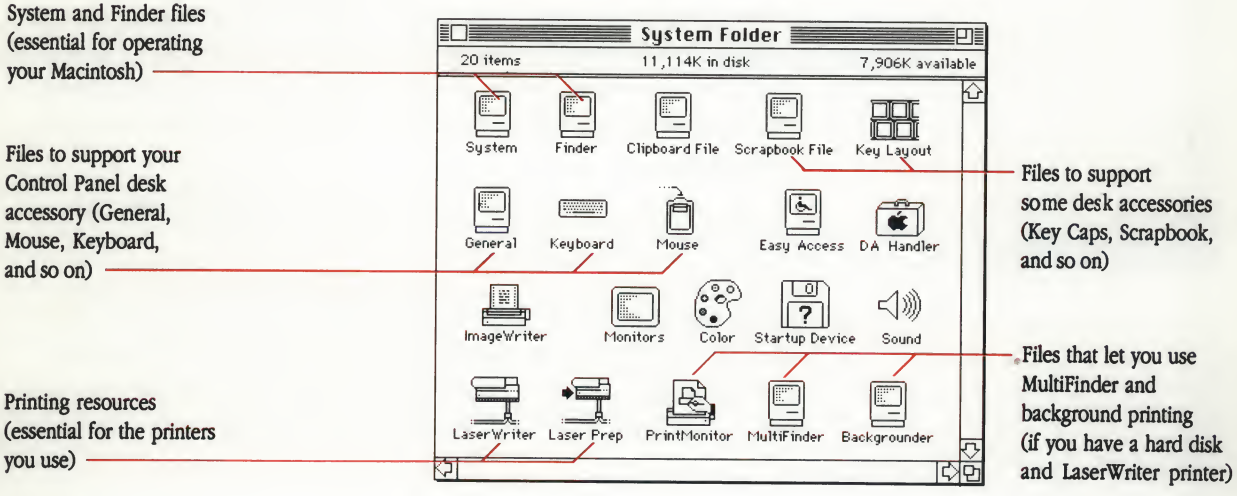


Figure 9-4
Sample startup disk System Folder for a Macintosh II

What else does a startup disk do?

Besides giving your computer the information it needs to get itself started, the System Folder on your current startup disk determines

- which versions of the system software you're using
- which devices you can control with the Control Panel
- the fonts you have available when you use an application (stored in the System file)
- which desk accessories appear in the Apple menu (also stored in the System file)
- the contents of the Scrapbook desk accessory

If one System Folder is good, will two be better?

No. Emphatically, no. With a hard disk, it is a common error to install (sometimes inadvertently) multiple System Folders. One way this can happen is in copying an application disk onto a hard disk. Because an application disk is also a startup disk (containing a System Folder), copying the entire disk will also copy the extra System Folder.

When you have multiple System Folders on a hard disk, your Macintosh has no way of knowing which one you want it to use. In effect, the computer takes its pick. You may wonder what has happened to the special fonts or desk accessories you remember installing. (They're in the System file in the System Folder the Macintosh did not use at startup.) Your Control Panel may not have all the features or settings you've grown accustomed to. (They're also in the "other" System Folder.) And so it goes. There is never any reason to have more than one System Folder on a startup disk; it adds nothing but complications.



Figure 9-5
Startup System Folder

The startup System Folder (the one the computer is currently operating from) has an icon on it to highlight it.

If you aren't sure whether you have more than one System Folder on a startup disk, use the Find File desk accessory to conduct a search. To install Find File, use the Font/DA Mover utility. See the *Macintosh Utilities User's Guide* for instructions. (You can also use the Font/DA Mover utility to copy fonts and desk accessories from one System file to another.)

Hard versus 800K startup disks

A startup disk can take up a lot of room. For example, on a Macintosh II decked out with a color monitor, MultiFinder, a LaserWriter printer, background printing, and extra fonts and desk accessories, the System Folder can take up more than 1 megabyte of space. Obviously, you can't fit that System Folder onto an 800K startup disk. On the other hand, it is possible to create a pared-down version of a startup disk that will fit comfortably on an 800K disk with room to spare.

If you use a hard disk as your startup disk, you have the luxury of more than enough space for a big System Folder. You can also keep a Setup Folder, applications, and documents on the same disk. You can install fonts and desk accessories in your System file with relative freedom. You can run background printing confident that there's room on your startup disk for the spooled files created.

When you don't have a hard disk, you don't have the same options. Even with two 800K disk drives, you need to use space wisely on an 800K startup disk so you can use the disk for more than one purpose. For example, you may want it to contain an application (and have some space for saving documents) in addition to the System Folder.

Small System files

In an effort to meet the needs of Macintosh users who don't have a hard disk, Apple has provided scaled-down versions of the System file. These are contained on the *Macintosh Utilities* disk 1 in the Mini System Setup Folder. You can use the Installer in that folder to install the appropriate resources for your Macintosh. (See the *Macintosh Utilities User's Guide* for details.)

If you install one of these small System files on your startup disk, it takes up less space. However, there is a drawback: The startup disk you create only works on one kind of Macintosh. In other words, if you install the Macintosh Plus resources, you cannot use the same startup disk on a Macintosh SE or Macintosh II.

- *Systems with a single disk drive:* With a single 800K disk drive and no hard disk, you may not want to install recent versions of the Macintosh system software. In order to install and make practical use of the latest system software, you need at least two 800K drives.

Before you update existing startup disks

As a precaution, you should make a backup copy of any startup disk whose system software you plan to update. If the disk is an application disk, contact the manufacturer to find out whether the application is compatible with the new Macintosh system software. If it is not compatible, ask the manufacturer whether he can provide an updated version of the application.

If you are in doubt about compatibility, don't update the application disk. Keep the copy containing the earlier system software and continue using it as a startup disk when you need to use the application.

Creating or updating a startup disk

When you start with an initialized disk that does not already have the system software on it (in the System Folder) and install system software, you are *creating* a startup disk. When you start with an existing startup disk and install the latest system software, you are *updating* a startup disk. In either case, you use the Installer (found in the Setup Folder), and the procedure you follow is identical.

The *Macintosh System Tools* disk can serve as a startup disk, but it's best to create (or update) your own disk and keep the master disks in a safe place. To create a startup disk for your Macintosh, you must install the necessary system software found on the *Macintosh System Tools* disk.

- *Back up your master disks:* It is a good idea to make backup copies of the two master disks, *Macintosh System Tools* and *Macintosh Printing Tools*. Use the backup copies as working copies to install the system software. That way you can keep the original master disks safe. If the backup copies are damaged in any way, use the master disks to create new copies. (For help, see "Making Copies of 3.5-Inch Disks" in Chapter 7.)

For hard disk users

When your startup disk is a hard disk, there are some special considerations, depending on whether the disk is brand new or has been used before.

- If your hard disk has never been used, you must initialize it according to the manufacturer's instructions. (Initialize an Apple SCSI hard disk with Apple HD SC Setup; use the version contained on the *Macintosh System Tools* disk. See Chapter 8, "Hard Disks," for instructions.)
- If you have inherited a used hard disk, it has already been initialized and it may contain an earlier version of the system software (not the most recent version, contained on the *Macintosh System Tools* disk that came with this manual). It is also possible that some of the applications on the disk will not be compatible with the new system software you are about to install. This can result in the loss or corruption of data on the hard disk.

 As insurance against such a mishap, before you install the new system software you should back up your hard disk according to the instructions in your owner's guide. (If you have the HD Backup utility, you can use that with an Apple hard disk. Or you can simply copy the applications and files from your hard disk onto 3.5-inch disks.)

 Later, if you discover that an application does not work properly with the new system software, contact the manufacturer and ask for an updated version of the application. Meanwhile, you may need to use an earlier version of the system software with that application. (For example, use a copy of the original application disk as your startup disk when using the application. See "Switching Startup Disks" later in this chapter.)

Using the Installer

These instructions assume your system has either two 3.5-inch disk drives or a hard disk and at least one 3.5-inch disk drive. Using the Installer on a system with a single 3.5-inch drive and no hard disk will require too much disk swapping to be practical. (Apple does not recommend using this new system software on a system with a single 3.5-inch drive and no hard disk.)

❖ *Are you ready?* If you are creating a startup disk and don't have a hard disk, make sure you have an extra 800K disk that you've initialized with the 800K format. It will be your new startup disk. (If it hasn't already been initialized, see "Preparing 3.5-Inch Disks for Use" in Chapter 7. The procedure is simple and takes about a minute.)

If you do have a hard disk, you should make it your startup disk.

To install *Macintosh System Tools*

1. **With your computer turned on, eject all disks and then turn off the machine.**

2. **Insert the *Macintosh System Tools* disk into a 3.5-inch disk drive.**

 Insert the disk label side up, metal end first.

3. **Turn on your Macintosh.**

 In a few moments, the desktop appears.

4. **Select and open the System Tools icon.**

 Click the System Tools icon to select it. Then choose Open from the File menu. (You can also double-click the icon to open it.)

5. **Select and open the Setup Folder.**

6. **Select and open the Installer.**

 The Installer dialog box appears.

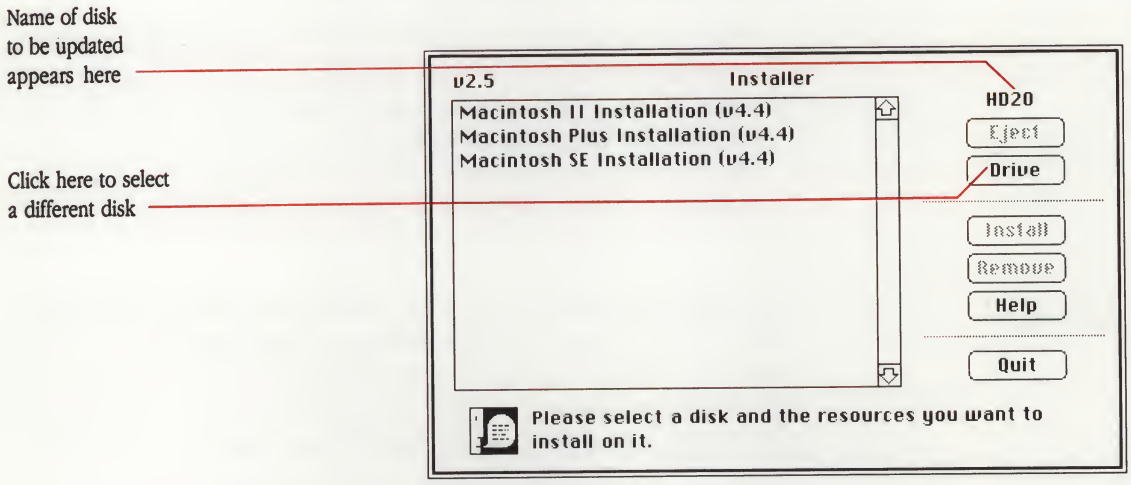


Figure 9-6
Installer dialog box for *Macintosh System Tools*

7. **If necessary, insert an initialized 800K disk into the second 3.5-inch disk drive.**

 This is necessary if you are creating or updating an 800K startup disk. If your hard disk will be the startup disk, go to step 8.

8. **Use the Drive button to select the disk you will install to.**

 The name of the drive that's currently selected appears at the upper-right corner of the box (above the buttons). If it's the name of the startup disk you're creating or updating, go on to step 9. If it's not, click the Drive button until you see the name you want.

9. **Select the appropriate resources for your computer.**

 For example, if you have a Macintosh SE, select Macintosh SE Installation.

 When you select the resources, you'll see the message "Figuring sizes..." at the bottom of the dialog box. There will be a delay while the Installer calculates how much space will be left on your startup disk after installation.

 - *Installer can't continue?* If you are updating an existing 800K startup disk, things can get crowded and you may get a message that the Installer cannot complete installation on this disk. If that happens, the problem is space. You will have to quit the Installer for now.

 See "Reclaiming Space on an 800K Startup Disk," later in this chapter, for suggestions. Also, you may have too many fonts and desk accessories installed in the current System file. (The Installer will not arbitrarily erase them to create space.) Use the Font/DA Mover to remove some fonts and desk accessories from the current System file. See the *Macintosh Utilities User's Guide* for instructions on using Font/DA Mover to do this.

10. **Click the Install button.**

 The Installer automatically installs the system software onto the disk you selected in step 8. When the process is finished, you'll see a message that installation was completed successfully.

11. **Click Quit to exit from the Installer.**

 In a few seconds you'll see the desktop again.

12. **Choose Shut Down from the Special menu.**

 This ejects any 3.5-inch disks.

 If you have a Macintosh Plus or Macintosh SE, the screen will darken, and a dialog box will appear with a Restart button.

 If you have a Macintosh II, the Shut Down command will completely turn off the power to your system.

To install *Macintosh Printing Tools*

You've installed the required system software. Now, if you have a printer, you need to install the necessary printing resources.

- *Are you on a network?* If you are connected by an AppleTalk network to a LaserWriter printer that you share with other users on the network, make sure everyone is ready to update to the same version of LaserWriter and Laser Prep (version 5.2 in this release). Otherwise, you may experience problems with the network.

 If you have to wait a few days before everyone on the network can update to version 5.2 of LaserWriter and Laser Prep, you will still be able to print documents just as you always have, using the older version. However, you will not be able to use the background printing feature of MultiFinder (described in Chapter 10).

1. **Turn on your computer.**

2. **When the desktop appears on the screen, insert the *Macintosh Printing Tools* disk into a 3.5-inch disk drive.**

 Insert the disk label side up, metal end first.

3. **If necessary, insert the 800K startup disk you are installing to into your second 3.5-inch drive.**

 This is necessary if you are creating or updating an 800K startup disk. If your hard disk will be the startup disk, go to step 4.

4. **Select and open the Printing Tools icon.**

 Click the icon and choose Open from the File menu. (You can also double-click the icon to open it.)

5. Select the appropriate printing resources.

If you have a LaserWriter and want to use background printing with MultiFinder, select these three icons

If you have an ImageWriter or ImageWriter II, select this icon

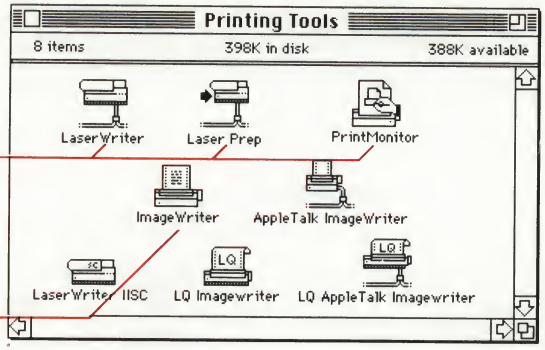


Figure 9-7
Contents of the *Macintosh Printing Tools* disk

You can Shift-click to select more than one icon.

If you have a LaserWriter and want to use background printing with MultiFinder, select three icons: LaserWriter, Laser Prep, and PrintMonitor. (If you don't plan to use background printing, don't select PrintMonitor.)

If you have an ImageWriter or ImageWriter II, select the ImageWriter icon. (If you have an AppleTalk card installed in an ImageWriter II, you should select AppleTalk ImageWriter.)

If you have a LaserWriter IISC and want to use background printing with MultiFinder, select two icons: LaserWriter IISC and PrintMonitor. (If you don't plan to use background printing, don't select PrintMonitor.)

If you have an ImageWriter LQ, select the LQ ImageWriter icon. (If you have an AppleTalk card installed in your ImageWriter LQ, select LQ AppleTalk ImageWriter.)

6. **Drag the selected icon (or icons) to the System Folder on the startup disk you are creating or updating.**

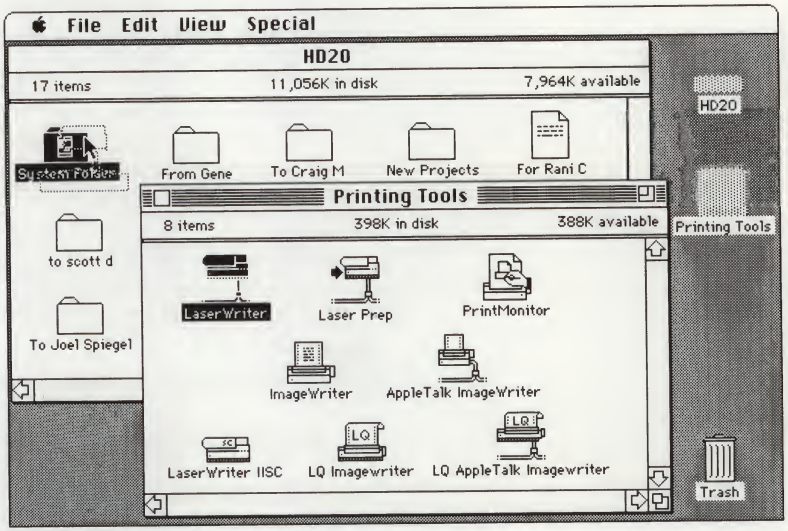


Figure 9-8
Dragging the printer icon to the System Folder

7. **Release the mouse button.**

 When you release the button, the icons you dragged go into the System Folder, where you should leave them. Do not put them into another folder inside the System Folder. If you do, you won't be able to print.

 You have installed the necessary printing resources.

Keep both disks, *Macintosh System Tools* and *Macintosh Printing Tools,* in a safe place in case you need to reinstall any of the system software.

If you don't have a hard disk

If you don't have a hard disk, you may need to use the Installer to update the system files on your application disks before using them as startup disks.

- *400K disks?* If you have applications on 400K disks, do not try to convert those disks to startup disks. (There isn't room.) Instead, you'll have to start the computer from another disk, then insert the 400K application disk and start the application.

Scanning order for startup disks

When you turn on your computer, it looks for a startup disk—the disk whose system files the computer will use. Because you can have startup disks in different drives at the same time, your computer uses an order of precedence in looking for a startup disk. Searching in this order, it uses the first startup disk it finds:

- internal 3.5-inch disk drive 1
- internal or external 3.5-inch disk drive 2 (if there is one)
- startup device set in the Control Panel of a Macintosh SE or a Macintosh II
- internal hard disk or SCSI hard disk with device ID 0
- devices connected to the SCSI port in declining device priority number (from 6 to 0)

If you're using more than one external hard disk with a System Folder, be sure to set the proper startup device in the Control Panel. See "Using the Startup Device Control Panel" in Chapter 5.

If you have an external hard disk, see the manual that came with the disk to read about SCSI device priority numbers.

Switching startup disks

The startup disk is the one whose icon appears in the top-right corner of your desktop. Sometimes you want to switch to a different startup disk while you're working—to gain access to special desk accessories or fonts you want to use. And sometimes the Macintosh will switch startup disks because of an action you've taken, whether you wanted to switch or not.

The Macintosh switches to a different startup disk whenever you do any of the following:

- Restart the computer using a different startup disk.
- Restart a Macintosh SE or Macintosh II after you've changed the startup device (from the Control Panel).

- Hold down the Option key while you open an application that's on another startup disk. (The second disk must contain a version of the Finder that's the same as, or later than, the Finder on the current startup disk. If the Finder is an earlier version, this will not work.)
- Hold down the Option and Command keys while you double-click the Finder icon on the disk you want to switch to. (Don't hold down these keys too long or the Rebuild Desktop dialog box will appear. If it does, simply click OK.)

Sometimes when you open an application on another startup disk (containing the latest version of the System and Finder files), the Macintosh will switch startup disks. However, this is unpredictable, and you cannot always make it happen.

❖ *With MultiFinder on:* You cannot switch startup disks with MultiFinder turned on. You'll get a message explaining that it can't be done. If you really need to switch to a different startup disk, turn MultiFinder off and restart the computer.

Customizing startup disks

Fonts and desk accessories are kept in the System file (inside the System Folder). You can use the Font/DA Mover to customize the System file on a startup disk so it contains your most useful fonts and desk accessories. (You can't just open the System file and drag things back and forth.)

An application you purchase might have special fonts or desk accessories suited to that particular application. The Font/DA Mover lets you copy these to the System file on any other startup disk (as long as there's room on the disk, of course). For instructions on using the Font/DA Mover, see the *Macintosh Utilities User's Guide*.

You can also drag other files (not fonts or desk accessories) from the System Folder on one disk to the System Folder on the startup disk you are customizing. For example, you might want a copy of a Scrapbook file—to have different Scrapbook contents available from time to time.

To make a startup disk a nonstartup disk

You may want to turn a startup disk into a nonstartup disk (a disk just for storing documents), especially if you're using a hard disk as your main startup disk.

1. **Start the system using any disk other than the one you want to make a nonstartup disk.**

2. **Insert the disk you want to change to a nonstartup disk into a 3.5-inch disk drive.**

3. **Open the icon representing the disk you inserted in step 2, and drag its System Folder to the Trash.**

 You cannot drag the System Folder from the current startup disk to the Trash. (It's in use.)

Reclaiming space on an 800K startup disk

It may be stating the obvious to point out that one 3.5-inch startup disk cannot hold everything that's on the two system tools disks you received with your Macintosh. Fortunately, you don't need all the features and resources provided.

Here are some suggestions that may help you create additional space on your startup disk:

- If you have copied the Setup Folder to your startup disk, open the folder and remove Apple HD SC Setup, dragging it to the Trash.
- Make sure you have installed only the printer resources you need. For example, if you are directly connected to an ImageWriter printer, you don't need AppleTalk ImageWriter, LaserWriter, or Laser Prep. If any of these icons are on the disk, remove them.
- If you don't have a LaserWriter printer, you cannot use background printing. If the icons for Backgrounder and PrintMonitor are on the disk, drag them to the Trash.

- If you don't expect to make use of Easy Access, remove it. (Easy Access is a file in the System Folder that assists people who have difficulty manipulating the mouse or typing with both hands on the keyboard. For details, see Chapter 6, "Keyboards.")
- Once you've used TeachText to read (or print) the Read Me document, drag TeachText and the Read Me document to the Trash. (TeachText is a no-frills word processor included to support the tutorial in Chapter 1, and to make it possible for you to read Read Me documents. If you want to print the Read Me document later, you can restart your computer from the *Macintosh System Tools* disk. Then select the Read Me icon and choose Print from the File menu.)
- You can use the Installer in the Mini System Setup Folder on the *Macintosh Utilities* disk 1 to install a smaller version of the System file. This will mean that you cannot use the disk on different versions of the Macintosh. (See the *Macintosh Utilities User's Guide* for details.)

All these items still exist on the master system tools disks, which you should store in a safe place. Removing them from your startup disk does not mean you won't have access to them in the future.

It's a good idea to keep about 50K available on your startup disks. Applications usually need a little working space on the current startup disk, even when the document you're working on is on another disk. (Information about the space available appears in the window for that disk, below the title bar. You can also select the startup disk's icon and choose Get Info from the File menu to see how much space is free.)

❖ *Outgrowing your disks?* When the information you need spreads to more disks than you can easily handle, the best solution is a hard disk drive. You can then keep everything on the hard disk, and use 3.5-inch disks for backup copies and to move information to or from the hard disk.

C H A P T E R 10

MultiFinder

WHO NEEDS THIS CHAPTER?

If you are familiar with the single-Finder environment and want to use MultiFinder, this chapter tells you what you need to know.

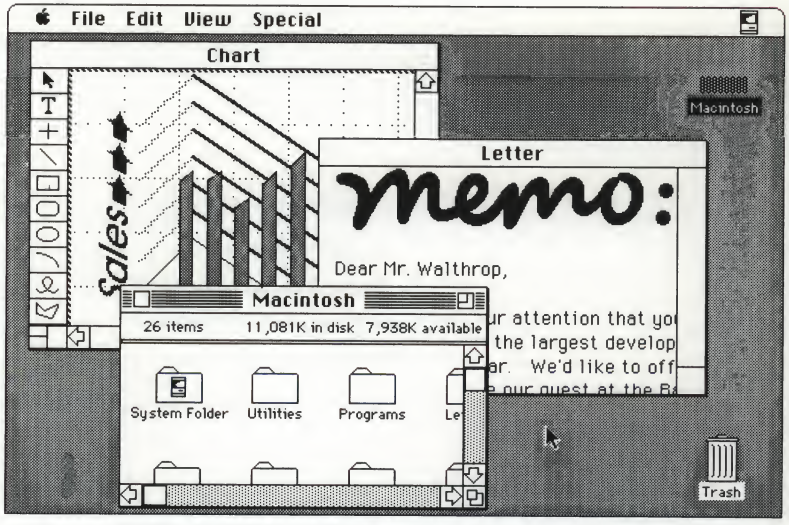


Figure 10-1
MultiFinder in action

What is MultiFinder?

MultiFinder is the first-generation multitasking operating system for the Apple Macintosh Plus, Macintosh SE, and Macintosh II computers—making it possible for you to have several applications open at the same time, including background applications that let you perform one task while your Macintosh performs another.

- You can see and work with documents from different applications concurrently. This means, for example, that you can copy and paste information between documents (and applications) easily and quickly—without having to save one document before you open the other.
- You can have constant access to the Finder. This makes it possible to start additional applications whenever you want, rename or delete documents you aren't working on, and so on.
- Because MultiFinder has background processing capabilities, you'll be able to run certain applications in the background while you continue working. MultiFinder comes with one background application for use with a LaserWriter printer: Background Printing. With this feature, you can print documents and go on with your work while printing is in progress. If you're sharing a LaserWriter on a network, you can even schedule documents to print after hours or at a time of day when there's minimal traffic at the printer.

What you should already know

MultiFinder is an advanced feature that will make your Macintosh more powerful and more flexible. This chapter assumes that you are moderately experienced with your Macintosh and that you already know basic Macintosh skills, including how to

- use the mouse and keyboard
- open an application or document
- throw documents away
- drag, shrink, and enlarge windows
- manipulate objects on the desktop
- use the Font/DA Mover (see the *Macintosh Utilities User's Guide*)
- use the Finder

If you don't know these techniques, take time now to learn them. Go through the tutorial in Chapter 1, spend time working with a few applications, and familiarize yourself with how you communicate with the computer and how it responds. You will appreciate and enjoy MultiFinder more fully when you are familiar with the Macintosh.

System requirements

MultiFinder is a feature of the system software that came with this manual. To use MultiFinder you must have installed version 6.0 or version 5.0 (the previous version) of the system software. (You'll find these numbers on the disk labels.) MultiFinder will not work with earlier versions.

MultiFinder runs on all Macintosh Plus, Macintosh SE, and Macintosh II computers with a minimum of 1 megabyte of memory (RAM). If you have more than 1 megabyte, MultiFinder gives you even more power and flexibility because you'll be able to open more applications at a time.

If you plan to use MultiFinder with more than one large application (the more advanced applications tend to be large), a minimum of 2 megabytes of memory is necessary for satisfactory performance. See your authorized Apple dealer or representative for information about installing additional RAM.

Finding out how much memory you have

To find out how much memory your Macintosh has, choose About the Finder from the Apple menu and look at the window that appears. You see the heading Total Memory, followed by a number.

This identifies the total memory (RAM) in your Macintosh

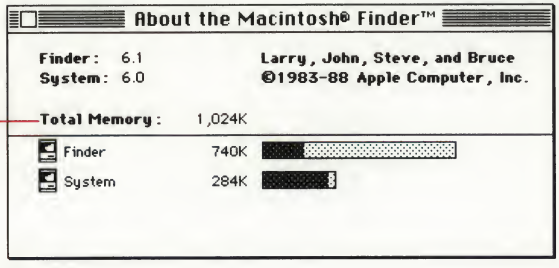


Figure 10-2
Total Memory in the About the Finder window

Divide the Total Memory number by 1,024. For example, the number 1,024 means you have 1 megabyte of RAM; the number 2,048 means you have 2 megabytes.

❖ *Can't find the heading Total Memory?* If you can't find Total Memory, you haven't installed the latest version of the system software. See "Using the Installer" in Chapter 9, "Startup Disks."

What's in this chapter?

Here's an overview of what you'll find in this chapter:

- how to prepare your system for background printing and turn MultiFinder on (and off)
- a sample session showing you how to work with MultiFinder and switch between applications
- an explanation of Background Printing in general and instructions for printing documents on a LaserWriter printer while you work in an application at the same time
- a discussion of how to manage the memory available for your applications (especially important if you have not expanded beyond the standard 1 megabyte)
- instructions for using the Set Startup dialog box to set your startup applications
- some tips for working with MultiFinder

How to use this chapter

The first time through, it's probably a good idea to read (or at least skim) this chapter from front to back.

- Follow the instructions for turning MultiFinder on.
- Go through the sample session.
- Read about background printing and memory management.
- If you use the same set of applications routinely, you may want to follow the instructions for setting startup applications.

As you become familiar with MultiFinder, you'll see that working with it requires the same skills you use in the single Finder environment. Yet to take advantage of MultiFinder's advanced features you need to understand some important concepts.

- *Are you ready?* Before you can take advantage of MultiFinder, you must install the latest system software. If you have not already done this, see "Using the Installer," in Chapter 9.

Turning MultiFinder on

You turn MultiFinder on by clicking in the Set Startup dialog box. If you have more than one disk icon on the desktop, make sure the one you plan to start from is the one highlighted. (Click it to select it.)

1. **Choose Set Startup from the Special menu.**

 The Set Startup dialog box appears.

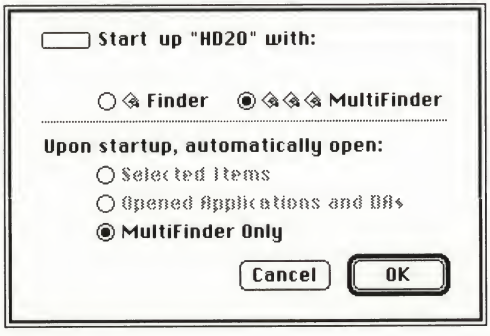


Figure 10-3
Set Startup dialog box

2. **Click the button labeled *MultiFinder* (the one with three icons after it).**

3. **Click OK.**

 This confirms your choice and closes the Set Startup dialog box.

4. **If you want to turn MultiFinder on right away, choose Restart from the Special menu.**

 If you'd just as soon continue what you're doing with things as they are, that's fine. The next time you choose Restart or turn off your computer and start it again, MultiFinder will be on.

Turning MultiFinder off

While most applications will run well with MultiFinder, now and then you might find an application that is not compatible. If you encounter erratic behavior in an application with MultiFinder on, you may want to turn MultiFinder off. You use the Set Startup dialog box to do this.

1. **Choose Set Startup from the Special menu.**

 The Set Startup dialog box appears.

2. **Click the button labeled *Finder* (the one with one icon after it).**

3. **Click OK.**

The next time you choose Restart or Shut Down from the Special menu, you'll be in the Finder with MultiFinder turned off.

- *Quitting your applications:* When you choose Restart or Shut Down with MultiFinder on and applications open, MultiFinder will quit most applications for you. If there are unsaved documents open, MultiFinder will ask whether you want to save each document. If you click Yes, MultiFinder will save the document and then quit the application. If you click No, MultiFinder will not save the document but will quit the application.

A sample session

MultiFinder gives you a lot of flexibility, and once you've become accustomed to working in this new environment, you'll make up your own mind about how you want to use all its features. Meanwhile, the best way to familiarize yourself with the possibilities is to get some hands-on experience.

Make sure you've installed MultiFinder and have started up with it turned on.

What you'll work with

To keep things simple in this session with MultiFinder, you will be working with two applications as you perform the procedures:

- Finder (a system application that gives you the desktop—your base of operations)
- TeachText (a simple word processing application)

Make sure the TeachText icon appears in the directory window of your startup disk. If you need to, you can copy TeachText to your startup disk from the *Macintosh System Tools* disk that came with this manual. (The Finder is available automatically, as soon as your system is turned on and you see the desktop.)

The directory for your startup disk should be the only open window. If any other windows are open, close them.

What you'll learn

In this sample session you'll see how easy it is to work with MultiFinder and switch between applications. Specifically, you'll become familiar with

- what's different about the Finder desktop and the menu bar
- how to start applications
- four ways to move among open applications
- how desk accessories work with MultiFinder

In the procedures that follow, the actions you should take appear as numbered steps, printed in **bold** type. Comments explaining what's happening, or why something's happening, are in plain type. Read along and follow the directions.

The Finder desktop



Figure 10-4
Small Finder icon

With MultiFinder and your computer turned on, you are looking at the Finder desktop. (The Finder is always the first application open.)

1. **Notice the small icon at the right edge of the menu bar.**

 The desktop looks the same as it did before you turned MultiFinder on—except that a small icon representing the currently active application appears at the right edge of the menu bar. The Finder icon is the one you see first because the Finder is the only thing running at this point.

Starting applications



Figure 10-5
TeachText icon

You can start applications as you need them. When you start a new one, the applications you've already started are still open and available to you.

2. **Open the TeachText icon to start the application.**

 In a few seconds you see the TeachText window, "Untitled," empty and filling the screen. The small icon at the right edge of the menu bar has changed from Finder to TeachText.

3. **Notice that the titles in the menu bar have changed.**

 The menu bar always holds menu titles for the application you're interacting with—TeachText in this case.

 Because many applications have similar menu titles, you may not notice the titles changing as you move between applications. There are times, though, when it's important to notice the menu bar and remember that it belongs to the application you're using. (With several applications open at once, you can lose track of where you are—especially when it's time to quit an application.)

The first way to move around: the Apple menu

The Apple menu is still what you use to open desk accessories, and now you can also use it to move among open applications.

4. **Move the pointer to the Apple menu, press the mouse button, and hold it down while you look at the menu.**

 When you want to verify which application you're using, look at the Apple menu. At the top of the menu, the About command tells you the name of the active foreground application. (Right now, it says About TeachText.)

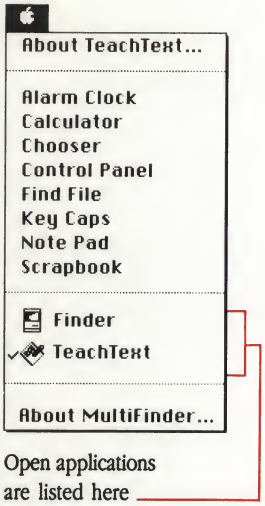


Figure 10-6
Apple menu

5. **Pull down the Apple menu again and notice the section near the bottom (the one showing icons and names).**

 With MultiFinder, the icons and names of all open applications appear in this section of the Apple menu. Notice the check mark beside the icon and name of the application you're using (TeachText).

 You can use this menu to choose any other open application on the list, bringing the application to the foreground where you can work with it.

6. **Choose Finder from the Apple menu.**

 You just used the Apple menu to move from one open application (TeachText) to another (Finder).

 As soon as you choose the Finder, the menu titles and the icon at the right edge of the menu bar change again. In addition, the Finder window comes forward. The TeachText window is still there in the background, covering the desktop, but inactive.

 - *Reminder:* If you inadvertently lose track of the window of any application you want to work with, you can always return to the Apple menu and choose the application there. This brings the application forward and makes its window active.

The second way to move around: windows

Clicking an application's inactive window is a second way to move among open applications.

7. **Click anywhere in the TeachText window (behind the Finder window).**

 You just moved from one application (Finder) to another (TeachText) by clicking in an inactive window.

8. **Use the size box to shrink the TeachText window so you can see the desktop behind it.**

 Make the window as small as you can. When you can't drag the size box any farther, release the mouse button. (You won't actually see the desktop until you let go of the mouse button.)

9. **Click the zoom box.**

 As soon as you click the zoom box, the window expands to fill the screen as before.

10. **Click the zoom box again.**

 The TeachText window shrinks back to the smallest size it can be. This zoom technique is a handy way to make windows big enough to work in, then shrink them quickly so you can see more of the desktop and other application windows.

Applications that use the whole desktop

A few applications (MacPaint version 1.5 or earlier, for example) use the whole desktop, and don't let you shrink them or move them aside to see windows and icons that are "under" them. The windows and icons are still there—they're just hidden.

When an application has taken over the desktop, you can still choose other open applications (including the Finder) from the Apple menu. This way you'll get an active window you can work in, and the menu bar will change to the menu bar of the application whose window is active. However, you still won't be able to see the Finder desktop. (You can tell because the Trash icon isn't there.)

If you really need to get to the Trash, or some other item on your desktop, simply quit the application that's taking up the screen. Use the Finder desktop for what you need, and restart the application.

11. **Drag the TeachText window toward the lower-left corner of your screen to get it out of the way.**

 You should be able to see most of the desktop and at least part of the Finder directory window. Right now the TeachText window is active, and the directory window is inactive.

12. **Click in the Finder directory window to make it active.**

 With MultiFinder, windows behave the same way they have in earlier versions of the Macintosh system software. That is, only one window can be active at a given time. As soon as you click in the Finder directory window, it becomes active and comes forward—making the Finder ready for you to interact with it. TeachText is still open, but its window is inactive.

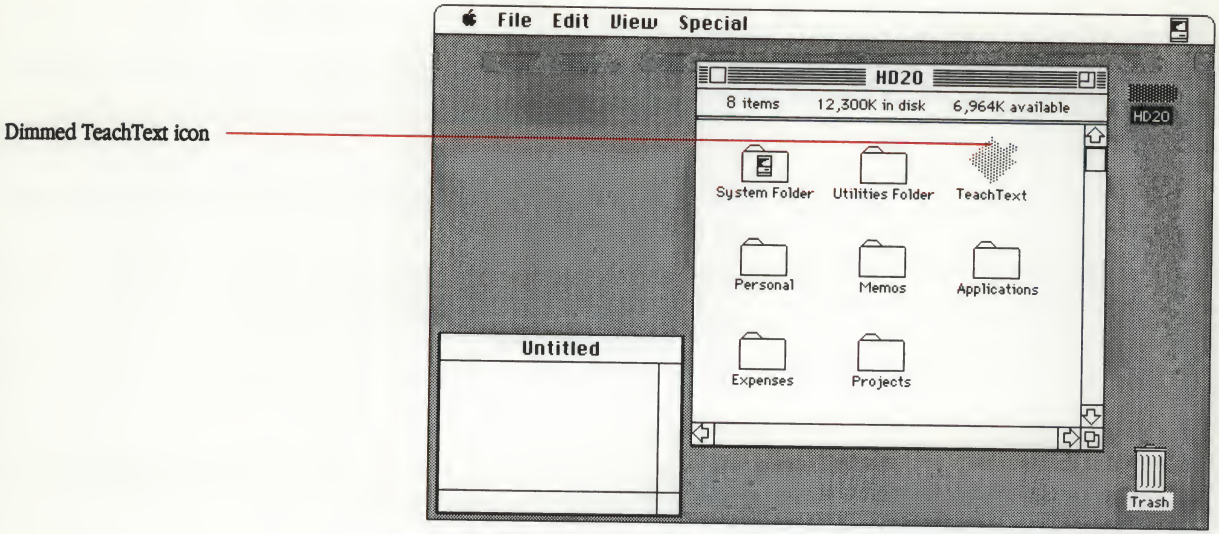


Figure 10-7
Active and inactive windows

The third way to move around: dimmed application icons

Here's a third way to move among open applications.

13. Find the TeachText icon in the Finder window.

Notice that the TeachText icon is dimmed, just as a folder is dimmed when it's open.

14. Double-click the dimmed TeachText icon.

You've activated TeachText again. Double-clicking a dimmed application icon tells the application you want to use it. (You can also select the icon and choose Open from the File menu.)

The fourth way to move around: small icon in the menu bar

Here's the fourth way to move around—it's simple and fast.

15. Click the small TeachText icon at the right edge of the menu bar.

This immediately brings to the foreground the application that was "behind" TeachText (Finder).

16. **Click the small Finder icon in the menu bar.**

 You're back to TeachText. Clicking the small icon in the menu bar brings forward each open application in succession. In effect you are paging through all the open applications.

❖ *So far...* You've used four techniques to let an open application know you want to interact with it:

- You chose the application from the Apple menu.
- You clicked in the application's inactive window.
- You double-clicked the application's dimmed icon.
- You clicked the small icon in the menu bar.

In the final part of this sample session, you'll get a chance to see how desk accessories work with MultiFinder.

Desk accessories

When you're using MultiFinder, desk accessories are still there when you want them—and they don't close automatically when you start or quit an application. Desk accessories continue to be available on the desktop when you move between applications.

17. **Choose Calculator from the Apple menu.**

 As the Calculator appears, the TeachText window becomes inactive and the menu bar changes.

18. **Click in the TeachText window, then choose Quit from the TeachText File menu.**

 You just quit the application you were using when you opened the Calculator desk accessory. (The TeachText icon is not dimmed now, because the application is closed.) And as you can see, the Calculator is still on your screen.

19. **Click in the Finder window to make it active.**

 Activating the Finder window may have covered up the Calculator, but it's still there—open and inactive.

20. **Drag the Finder window down about 2 inches so you can see the Calculator again.**

 You have to release the mouse button to finish dragging.

21. **Click in the Calculator to bring it forward, then choose Close from the File menu (or click its close box).**

In this sample session you've become familiar with the menu bar and with starting applications, and you've practiced using the Apple menu, activating windows, and opening and closing desk accessories. That's most of what you need to know to work happily in the MultiFinder environment.

Background Printing

The term **background processing** describes what happens when the computer does some work for you in the background—without interrupting or disturbing you—while you use the same computer to work on something else. With appropriate background applications (and MultiFinder), you are free to continue using your Macintosh while it performs other tasks for you.

Background Printing (included with MultiFinder) is an example of a background process. With Background Printing and a LaserWriter printer, you can continue working in an application *and* print documents at the same time.

How Background Printing works

Spooled files are files that the computer places in temporary storage, out of the way while other processing goes on.

When Background Printing is turned on, any time you use the Print command (in the File menu), the document you are printing will be saved on your startup disk and sent to the printer. (In technical jargon, the document has been **spooled.**) If you send several documents to the printer, each will be spooled, placed inside the Spool Folder (in the System Folder), and then printed in order.

Spooling requires just a fraction of the time it takes to print a document, greatly reducing your waiting time. Once the document has been spooled, the actual printing can go on in the background—freeing the computer for your use.

Background Printing won't change how you use the Print command, but it reduces the time your computer is tied up with printing.

Making sure Background Printing is on

MultiFinder comes with Background Printing preset to On. However, if someone else has used your system, it may have been turned off. To take advantage of Background Printing, first verify that it's on.

1. **Choose the Chooser desk accessory from the Apple menu.**

2. **In the upper-left corner of the Chooser window, select the LaserWriter icon.**

 Background Printing is an option only for LaserWriter printers.

 As soon as you click the LaserWriter icon, you'll see the standard list of LaserWriter printers you have access to. Below that box you'll find the label Background Printing followed by the buttons On and Off.

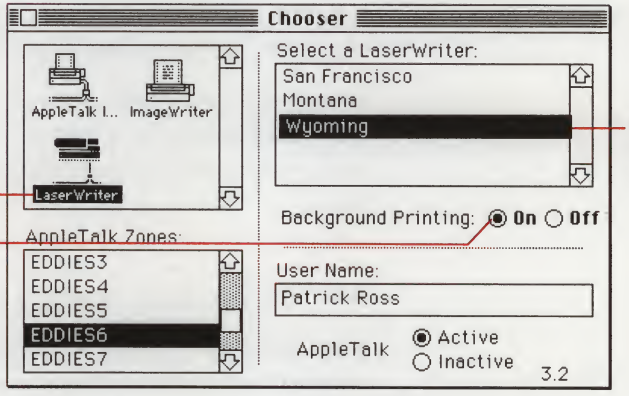


Figure 10-8
Background Printing On/Off buttons in the Chooser window

3. **Make sure the On button is selected.**

4. **If necessary, select the LaserWriter where you want to print your documents.**

 If none of the LaserWriters named is selected, PrintMonitor won't know where to print your document. (For information about PrintMonitor, keep reading.)

5. Close the Chooser window.

When Background Printing is turned on, you can print documents as you always have—with added speed and convenience. On the other hand, you can decide you want additional control over the printing process. For example, you might want to review the status of a document you are printing, schedule when it prints, and determine whether or not you receive notification of what's going on. The application that lets you do all this is called *PrintMonitor*.

PrintMonitor

With Background Printing turned on, as soon as you choose the Print command you open PrintMonitor, a new application. PrintMonitor offers options intended to give you additional control over what happens to documents you are printing. At the same time, PrintMonitor is self-sufficient enough that you can ignore its presence and let it go about its business in the background.

As with other applications in the MultiFinder environment, there are several ways to bring the PrintMonitor window to the front of your screen so you can interact with it:

- If nothing is printing at the moment, you can select and open the PrintMonitor icon. (You'll find the icon in the System Folder.)
- If printing is going on, PrintMonitor is open and you have several ways to bring its window to the front. You can choose PrintMonitor from the Apple menu; you can click the small icon in the menu bar to cycle through the open applications until PrintMonitor comes to the front; or you can double-click the dimmed PrintMonitor icon (in the System Folder).

The menu bar now belongs to PrintMonitor.

You use the PrintMonitor File menu for several purposes:

- to open or close the PrintMonitor window
- to open the Preferences dialog box
- to stop (or resume) printing

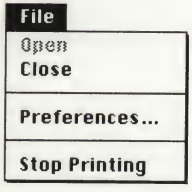


Figure 10-9
PrintMonitor File menu

The PrintMonitor window

Whenever you open PrintMonitor (by choosing its name from the Apple menu or selecting and opening its icon in the System Folder), you'll see the PrintMonitor window.

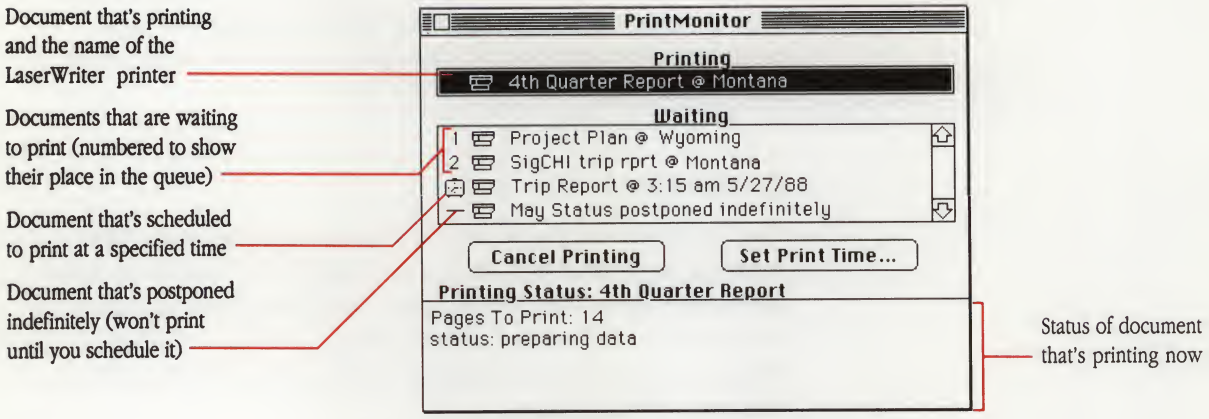


Figure 10-10
PrintMonitor window

The PrintMonitor window has a number of useful features. Going from top to bottom, the following sections explain what they do.

- **Printing.** This part of the window tells you the name of the document that is printing and the name of the printer you're using.
- **Waiting.** This part tells you the names of any other documents you've elected to print, and general information about their status.
 - Numbered documents are waiting to be printed as soon as possible, and the numbers show which will print first, second, and so on. Along with the name of the document, the list also shows the name of the printer it's going to.

 Any time you want to change the order in this list, simply drag a numbered document to a different place in the sequence. (Move document number 2 into position as number 1, for example.)
 - When you've deferred printing until a specific time of day, the document is identified by a small clock. (You use Set Print Time to defer printing.) In addition, you see the time and date when the document is scheduled to print.

- Documents that you've postponed indefinitely appear with a short blank line beside them (and the message "postponed indefinitely"), indicating that there is no set time for them to print. They will stay this way until you use Set Print Time to schedule printing.

If you have more than four documents in the Waiting list, you can scroll to see the rest.

❖ *More than one LaserWriter printer?* If you are on a network with access to more than one LaserWriter printer, you can send documents to different printers. Use the Chooser to select the printer—before you choose the Print command.

- **Remove from List / Cancel Printing.** Just below the Waiting list is a button labeled *Remove from List* or *Cancel Printing,* depending on which document you select.
 - If you select one of the Waiting documents, the button reads Remove from List. Click it to delete that particular printing request. (You can Shift-click to select and delete more than one document.)
 - If you select the document that is actively printing, the button reads Cancel Printing. Click it if you want to cancel the printing that's in progress.
- **Set Print Time.** This button allows you to specify a time and date to print a document in the Waiting list. First select the document you want, then click this button. The Set Print Time dialog box appears.

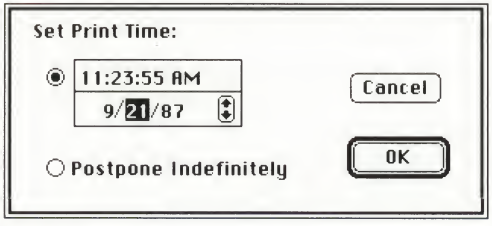


Figure 10-11
Set Print Time dialog box

When you get to this dialog box, you can set the time and date you want your document to print, using a clock that works just like the Alarm Clock desk accessory. (By the way, the current time and date always appear first on this clock.)

Change the time or date displayed by clicking the digits you want to change. Arrows appear on the right. Click the up or down arrow to scroll the numbers higher or lower. Or use the keyboard to type the numbers. Press the Tab key to move to the next field (for example, from month to day to year). When the setting is what you want, click the close box. This will also close the Set Print Time dialog box.

If you don't know when you want to print a document, click the button beside Postpone Indefinitely. Later, when you're ready to schedule printing, come back to this dialog box and use the clock to set the appropriate time (and date, if necessary).

Once you've made your selection, click OK to confirm it. Or, if you change your mind, you can click Cancel.

- **Printing Status.** This area at the bottom of the window gives you information about any document you have selected from Printing or Waiting.

The Preferences dialog box

When you choose Preferences from the PrintMonitor File menu, the Preferences dialog box appears.

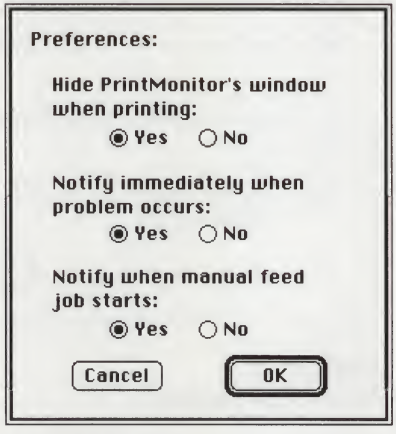


Figure 10-12
Preferences dialog box

- **Hide PrintMonitor's window when printing.** This option is preset to Yes. Even when the setting is Yes, you can always use the Apple menu to bring up the window.

 If you change this setting to No, every time printing starts the PrintMonitor window will appear on your desktop. However, it will not come to the front to interrupt whatever else you're doing. You may have to drag a few windows out of the way to find it (or you can choose PrintMonitor from the Apple menu to bring the window forward).

- **Notify immediately when problem occurs.** This option is preset to Yes. This means that if a problem develops that will prevent a document from printing, an alert message will appear to inform you—even if it means interrupting something else you're doing. If your computer is short of memory or the printer is out of paper, you will be alerted.

 If you change the setting to No, the alert messages will still be sent, but they will be stored until you go looking for them. If you notice that a particular document hasn't printed when you think it should have, choose PrintMonitor from the Apple menu (or select and open its icon). Any alert messages will appear, along with the PrintMonitor window.

- **Notify when manual feed job starts.** This option is preset to Yes. If you have selected Manual Feed (in the LaserWriter dialog box), you need to know when the job is going to print so you can feed the printer what it needs. PrintMonitor will alert you, asking you to bring the PrintMonitor window to the front. The PrintMonitor window will identify the document you are printing, and name the printer involved.

 If you change the setting to No, PrintMonitor will not alert you when the manual feed job starts. If no one is there to "feed" the printer, the LaserWriter will wait about a minute and then cancel the job.

 If your LaserWriter has a non-Apple paper feeder that requires you to select Manual Feed (even though the process is mechanical), you may want to change the setting to No. With that kind of paper feeder in place, you can assume that the printer will get the paper it needs, and you won't need to be alerted every time a job starts.

Stop Printing / Resume Printing

This label on the PrintMonitor File menu changes, depending on what you chose most recently.

- If it says Stop Printing and you choose it, the printing process will stop as soon as the current document finishes printing. (If you don't want to wait for the document to finish printing, use the Cancel Printing button in the PrintMonitor window, described earlier.) At that point, the label will change to Resume Printing.
- If it says Resume Printing and you choose it, printing will begin again. The label will change to Stop Printing.

Once you've chosen Stop Printing, none of your documents will print until you come back to the PrintMonitor File menu and choose Resume Printing.

Some technical points about memory

Your Macintosh has a finite amount of memory that it sets aside for each application and uses to keep track of what's going on. When you open two or more applications with MultiFinder, you add to the complexity of the computer's task in sorting out how much memory is available and how much it can allocate. Once in a while, you may get a message that you can't open an application because there's not enough memory available. When that happens there are several possible ways to resolve the situation, but first you need to understand how memory works in your Macintosh.

Think of your refrigerator at home. Certain areas are fixed in size (such as the freezer compartment and vegetable drawers, which cannot shrink or expand). Other areas can change; you can adjust shelves to meet your needs. When you have a dozen 9-inch bottles of soda pop, and your shelves are arranged for items 5 inches tall, you don't cut the bottles in half to make them fit; you raise, lower, or remove one or more shelves to allow for 9 inches of vertical space.

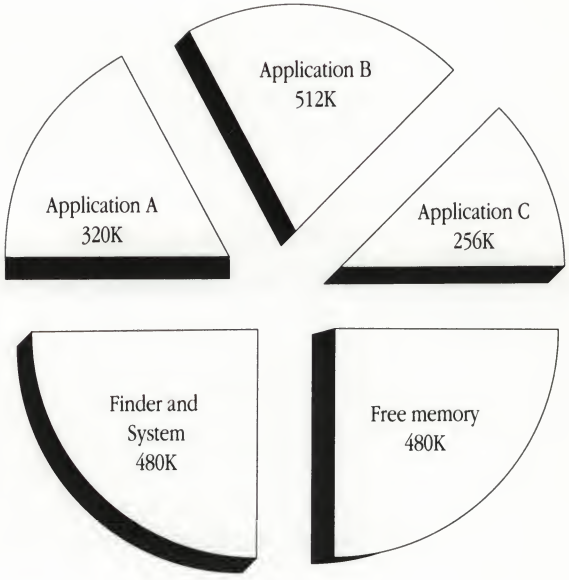


Figure 10-13
How memory works in your Macintosh

The memory in your Macintosh is similar. A part of it is reserved exclusively for the System file and the Finder. The rest of your computer's memory is more flexible.

The Finder memory graph

To find out how memory is allocated in your system, you use the Finder memory graph. To see it, choose About the Finder from the Apple menu. In the window that appears, the graph shows you how much memory each open application is assigned and how much of that memory the application is currently using.

This is the largest block of memory available for the next application you open

The bars show how much memory is available for each open application (dark areas show how much is being used right now)

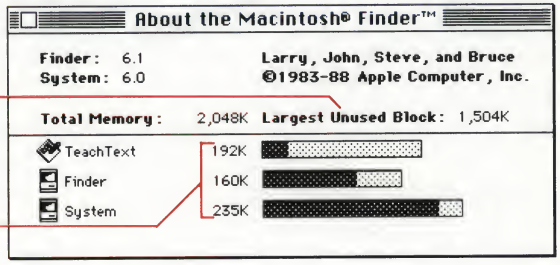


Figure 10-14
About the Finder window

The number labeled *Largest Unused Block* just above the graph is the amount of memory available for another application. This number, however, doesn't necessarily represent the total amount of free memory in the system because of something called *fragmentation.*

Fragmented memory

Fragmentation occurs when you start some applications, quit one or more, and then start another application. The memory in the system is broken into chunks—fragmented—so that it isn't all available as one contiguous block. Macintosh applications can run only in contiguous blocks of memory.

Sometimes you'll get a message telling you that there's not enough memory available when in fact the memory you need is not being used, but is scattered in separate areas. If this is the case, you just have to tell the computer to collect the smaller areas into a single larger one.

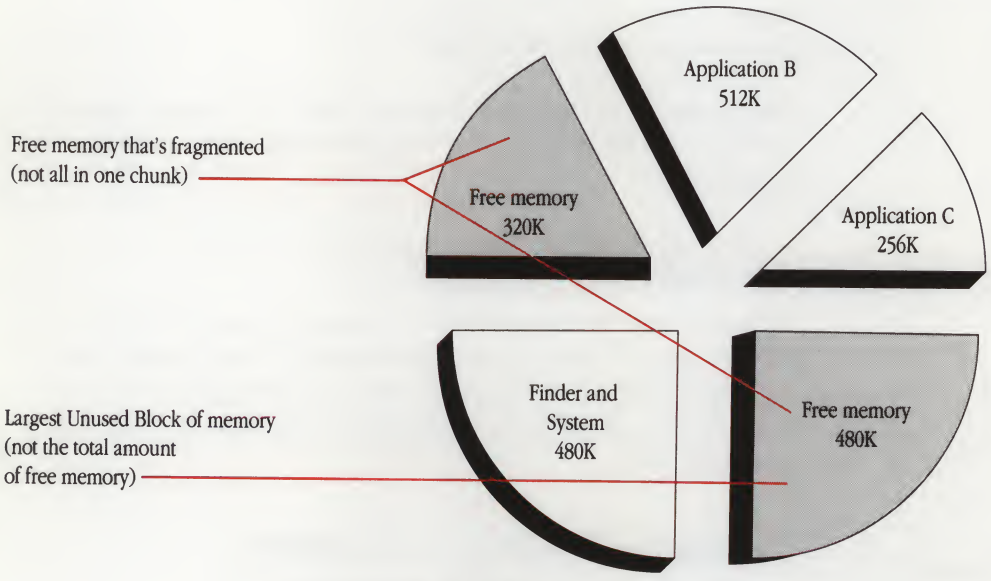


Figure 10-15
Fragmented memory

Creating an unfragmented block of memory

Follow these steps to reorganize free memory into an unfragmented block:

1. **Quit all applications.**

2. **Start the applications again.**

When you restart the applications, the fragmentation will be gone. The largest available block size in the window will be a true gauge of the amount of memory available for additional applications.

Changing application memory size in special situations

In general, as you start an application, it tells the computer how much memory it wants reserved. As long as there is a big enough chunk of free memory, the computer will accommodate the demands of each application.

Occasionally, though, you might need to adjust the amount of memory set aside. Some older applications ask for more memory than they really need. (These applications weren't expected to share computer memory with other applications—as they must when you use MultiFinder.) Other times, when you are working on a very large document, the application may not have asked for enough space in memory.

You can tell the computer to set aside different amounts of memory for an application's use—more if you get a message that the application is out of memory, less if you want to try conserving memory to run more applications. You modify memory size in the application's information window.

△ **Important** Before you lower the memory size of any application, make a backup copy of the application. △

To change an application's memory size:

1. **Select the application's icon and choose Get Info from the File menu.**

 The information window for the application appears.

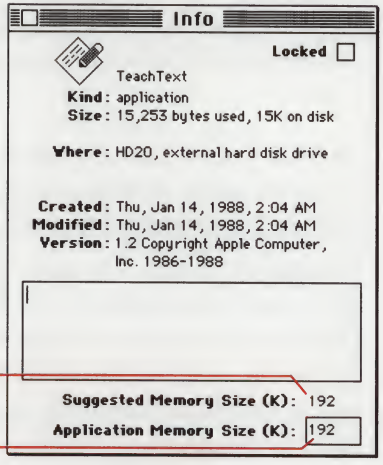


Figure 10-16
An information window

Near the bottom of the window you see two lines:

- *Suggested Memory Size* specifies the amount of memory recommended for this application. You cannot edit this number; it's here for your information (so you won't have to remember what the recommended amount was).
- *Application Memory Size* shows the amount currently reserved for the application. You can edit this number to increase (or decrease) the memory to be used.

If you don't see these lines, MultiFinder is not turned on. (See "Turning MultiFinder On" earlier in this chapter.)

△ Important Do not change Application Memory Size to a number that is lower than Suggested Memory Size. Doing so will cause the application to run with unpredictable results (if it operates at all).

If the application does not include a Suggested Memory Size ("n/a" appears instead of a number) or if you think the application is taking up more space than it needs, contact the manufacturer and ask what memory size is recommended. △

2. **Use the mouse to select the Application Memory Size box.**

 When it's selected, the box is highlighted.

 If you cannot select the Application Memory Size box for a particular application, the application must be open. You cannot change the memory size for an open application. Quit the application first.

3. **Type a number to change the memory size.**

 For example, if you plan to work on an extra-large spreadsheet, you might increase the size from 384K to 512K.

 ❖ *To reinstate Suggested Memory Size:* If you want to change this number back to the recommended amount, leave the box blank. The preset number will be filled in automatically.

4. **Click the close box on the information window.**

The next time you start the application, it will have the specified memory area to work in.

The Set Startup command

MultiFinder lets you select two or more applications (and documents) to open automatically upon startup. This is especially handy if you use the same set of applications from one day to the next.

Using Set Startup requires a bit of advance planning. Once you choose the Set Startup command, the Set Startup dialog box will appear, presenting these options:

- *Selected Items* refers to any applications and documents you select in the directory window *before* you choose Set Startup. When you select multiple icons, they must all come from the same folder or they will not all be included as startup applications and documents.

 If you select only one application, its name will appear instead of "Selected Items." (When no applications are selected, this option will be dimmed and you can't use it.)

- *Open Applications and DAs* refers to any applications and desk accessories that are open at the time you choose Set Startup. If the applications you have already opened are the ones you want to see when you turn on your computer, this is the button to click. (When no applications are open, this option will be dimmed.)

MultiFinder Only / Finder Only means that you want MultiFinder (or the Finder, if MultiFinder is turned off) to be your startup application. This button is selected automatically if you have not clicked one of the other two buttons in the list.

Setting startup applications

1. **Decide which Set Startup option you want to use.**

 The choices are Selected Items, Open Applications and DAs, and MultiFinder Only / Finder Only. (The third choice changes depending on whether MultiFinder is turned on or not.)

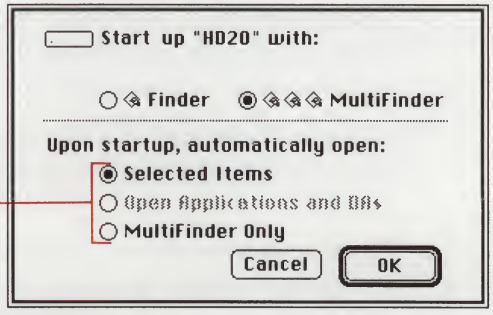
2. **If it isn't already active, activate the Finder.**

 You can only get to the Set Startup command from the Special menu in the Finder.

 If you can see the Finder window, click in it to activate the Finder. Or choose Finder from the Apple menu.

3. **Choose Set Startup from the Special menu.**

 The Set Startup dialog box appears.



The list represents the options for startup applications

Figure 10-17
Set Startup dialog box

4. **Click the button next to the option you want.**

5. **Click OK.**

Any time you want to change your startup applications, you must click OK for the changes to take effect.

Tips for working with MultiFinder

This section gives you some suggestions that may enhance your working relationship with MultiFinder. The first is a shortcut, and the second may be useful if you haven't expanded your system to more than 1 megabyte of memory.

- **Temporarily starting without MultiFinder.** If you are having problems with an application and think it may not be happy in the MultiFinder environment, you can start without MultiFinder temporarily. Press the Command key and hold it down while you start (or restart) your computer. Keep holding it down until the menu bar appears, then let go. This turns MultiFinder off for this work session only. The next time you start or restart your computer, MultiFinder will start as usual.

 If you want to turn MultiFinder off altogether, use the Set Startup dialog box. (See "Turning MultiFinder Off" earlier in this chapter.)

- **Using the RAM cache.** The RAM cache lets you set aside a part of memory where applications can store information for quick retrieval. This can speed up your work. However, the RAM cache takes memory that could be used to start an application. For a system with 1 megabyte of memory, a RAM cache of 32K is a good working size. (And if you're really pressed for space, you can turn it off.)

 To determine what setting you have on your system, choose Control Panel from the Apple menu. In the Control Panel window, you'll see a section labeled RAM Cache. If RAM Cache is turned on and the setting is higher than 32K, lowering it will free up an equivalent amount of memory. (For this change to take effect you must restart your Macintosh.)

- **Using Font/DA Mover.** The Font/DA Mover utility works best in the single Finder environment (with MultiFinder turned off).

- **Using HD Backup.** The HD Backup utility works unpredictably with MultiFinder turned on. If you plan to use this utility to back up a number of files on your hard disk, it is best to turn MultiFinder off first.

- **Switching startup disks.** Occasionally you may want to switch from one startup disk to another without first shutting down your Macintosh. (Changing startup disks this way is sometimes called *switch-launching*.) You cannot do this with MultiFinder turned on, and you'll get a message to that effect. If you really need to switch to a different startup disk, turn MultiFinder off and restart the computer. Or you can choose Shut Down and restart from the other startup disk.

APPENDIX A

A History of Macintosh System Software

AS A GENERAL RULE, IT IS BEST TO USE THE MOST RECENT VERSION OF Macintosh system software recommended for your Macintosh—so you can take advantage of new features and enhancements. However, not all versions of system software will work on all Macintosh computers. The chart in Figure A-1 shows which generations of system software are compatible with different versions of the Macintosh.

	Macintosh 512K	Macintosh 512Ke	Macintosh Plus	Macintosh SE	Macintosh II
Finder file version 4.1					
System file version 3.0					
System file version 3.2					
System file version 4.0					
System file version 4.1					
System file version 4.2					
System file version 6.0					

Figure A-1
Recommended system software for different Macintosh computers

Some of the changes Apple makes to system software do not produce noticeable differences in what you see on your screen. Occasionally, the engineers have to repair a problem, and many times they simply improve the speed and efficiency of a feature.

On the other hand, there are changes that create important new features, and some of these add to the size and complexity of the system software. The end result is improved performance, but because of the increased file size, not all versions of the Macintosh computer can take advantage of some new features.

In general, when anything is modified, the change is reflected in a change in version number and file size. To learn the version number of a system software file on any of your startup disks, select the file icon and choose Get Info from the File menu.

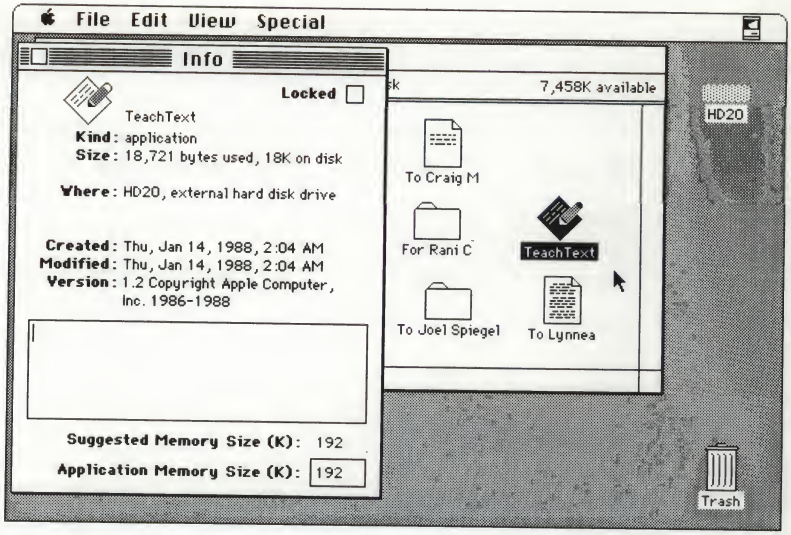


Figure A-2
Information window for a System file

There is a new scheme for displaying the version numbers of the files included in the latest Macintosh system software. When you get information about one of these files, along with each file's version number you'll see the overall version number for this generation of system software. For example, if you select the System file and choose Get Info, you'll see the version number 6.0.

On the next few pages you'll find a series of tables, each identified by a specific Macintosh computer (starting with the Macintosh 512K). These tables provide specific information about the contents of the System Folder in different generations of Macintosh system software.

Missing versions? If you read the tables carefully, you may notice times when version numbers seem to skip a beat. In fact, the tables do not account for every single version of every feature ever created. For example, there is a version 3.3 of the System file (created in the fall of 1986 to be shipped with the AppleShare file server). Because that version was never included on a *System Tools* disk, it has not been mentioned here. These tables reflect changes that appeared in different generations of *System Tools* disks.

Some of the files listed in the tables were not assigned version numbers, but you can use the Get Info command from the File menu to identify the creation date.

System software for the Macintosh 512K

File name	Created Jan. '85	Created Sept. '85	Created Jan. '86	Created June '86	Created Jan. '87
 **System**					
Version	None	None	3.0	3.2	4.0
File size	79K	No change	179K	186.5K	208.5K
 **Finder**					
Version	4.1	4.1	5.1	5.3	5.4
File size	46K	No change	55.5K	55.5K	78K
 **ImageWriter**					
Version	None	2.0	2.1	2.3	2.5
File size	25K	27K	30.5K	31K	36.5K
 **Clipboard**					
Version	None	None	None	None	None
File size	0K	0K	0K	0K	0.5K
 **Scrapbook**					
Version	None	None	2.0	No change	2.1
File size	9K	No change	12.5K	No change	11.5K
 **LaserWriter**					
Version	—	—	1.1	3.1	3.3
File size	—	—	27.5K	33.5K	39.5K
 **Laser Prep**					
Version	—	—	1.1	3.1	3.3
File size	—	—	20.5K	23.5K	25K
 **AppleTalk ImageWriter**					
Version	—	—	2.1	2.3	2.5
File size	—	—	39.5K	40K	41.5K
 **Font/DA Mover**					
Version	—	—	3.0	3.2	Moved to
File size	—	—	39.5K	40K	Utilities disk
 **General (Control Panel)**					
Version	—	—	—	—	1.0
File size	—	—	—	—	9.5K

File name	Created Jan. '85	Created Sept. '85	Created Jan. '86	Created June '86	Created Jan. '87
 **Key Layout**					
Version	—	—	—	—	2.0
File size	—	—	—	—	3K
 **Keyboard (Control Panel)**					
Version	—	—	—	—	1.0
File size	—	—	—	—	1.5K
 **Mouse (Control Panel)**					
Version	—	—	—	—	1.0
File size	—	—	—	—	3.5K

System software for the Macintosh 512K enhanced

File name	Created Jan. '86	Created June '86	Created Jan. '87	Created Apr. '87
 **System**				
Version	3.0	3.2	4.0	4.1
File size	179K	186.5K	208.5K	311.5K
 **Finder**				
Version	5.1	5.3	5.4	5.5
File size	55.5K	55.5K	78K	78.5K
 **ImageWriter**				
Version	2.1	2.3	2.5	2.6
File size	30.5K	31K	36.5K	36K
 **Clipboard**				
Version	None	None	None	None
File size	0K	0K	0.5K	0.5K
 **Scrapbook**				
Version	2.0	No change	2.1	No change
File size	12.5K	No change	11.5K	No change

File name	Created Jan. '86	Created June '86	Created Jan. '87	Created Apr. '87
 **LaserWriter**				
Version	1.1	3.1	3.3	4.0
File size	27.5K	33.5K	39.5K	49.5K
 **Laser Prep**				
Version	1.1	3.1	3.3	4.0
File size	20.5K	23.5K	25K	No change
 **AppleTalk ImageWriter**				
Version	2.1	2.3	2.5	2.6
File size	39.5K	40K	41.5K	41K
 **Font/DA Mover**				
Version	3.0	3.2	Moved to	
File size	39.5K	40K	Utilities disk	
 **General (Control Panel)**				
Version	—	—	1.0	3.1
File size	—	—	9.5K	13K
 **Key Layout**				
Version	—	—	2.0	2.1
File size	—	—	3K	3.5K
 **Keyboard (Control Panel)**				
Version	—	—	1.0	3.1
File size	—	—	1.5K	1.5K
 **Mouse (Control Panel)**				
Version	—	—	1.0	3.1
File size	—	—	3.5K	3.5K
 **Easy Access**				
Version	—	—	—	1.0
File size	—	—	—	3.5K

System software for the Macintosh Plus

File name	Created Jan. '86	Created June '86	Created Jan. '87	Created Apr. '87	Created Sept. '87	Created Apr. '88*
 **System**						
Version	3.0	3.2	4.0	4.1	4.2	6.0
File size	179K	186.5K	208.5K	311.5K	312.5K	361K
 **Finder**						
Version	5.1	5.3	5.4	5.5	6.0	6.1
File size	55.5K	55.5K	78K	78.5K	97K	103K
 **ImageWriter**						
Version	2.1	2.3	2.5	2.6	No change	2.7
File size	30.5K	31K	36.5K	36K	No change	39K
 **Clipboard**						
Version	None	None	None	None	None	4.2
File size	0K	0K	0.5K	0.5K	0.5K	0K
 **Scrapbook**						
Version	2.0	No change	2.1	No change	No change	2.3
File size	12.5K	No change	11.5K	No change	No change	1K
 **LaserWriter**						
Version	1.1	3.1	3.3	4.0	5.0	5.2
File size	27.5K	33.5K	39.5K	49.5K	58.5K	61K
 **Laser Prep**						
Version	1.1	3.1	3.3	4.0	5.0	5.2
File size	20.5K	23.5K	25K	No change	No change	26K
 **AppleTalk ImageWriter**						
Version	2.1	2.3	2.5	2.6	No change	2.7
File size	39.5K	40K	41.5K	41K	No change	44K
 **Font/DA Mover**						
Version	3.0	3.2	Moved to			
File size	39.5K	40K	Utilities disk			
 **General (Control Panel)**						
Version	—	—	1.0	3.1	3.2	3.3
File size	—	—	9.5K	13K	13K	14K
 **Key Layout**						
Version	—	—	2.0	2.1	2.2	No change
File size	—	—	3K	3.5K	4K	No change

File name	Created Jan. '86	Created June '86	Created Jan. '87	Created Apr. '87	Created Sept. '87	Created Apr. '88*
 **Keyboard (Control Panel)**						
Version	—	—	1.0	3.1	3.2	3.3
File size	—	—	1.5K	1.5K	4.5K	4K
 **Mouse (Control Panel)**						
Version	—	—	1.0	3.1	3.2	3.3
File size	—	—	3.5K	3.5K	3.5K	3K
 **Sound (Control Panel)**						
Version	—	—	—	—	—	3.3
File size	—	—	—	—	—	4K
 **Easy Access**						
Version	—	—	—	1.0	No change	No change
File size	—	—	—	3.5K	No change	No change
 **DA Handler**						
Version	—	—	—	—	1.0	1.1
File size	—	—	—	—	5K	6K
 **MultiFinder**						
Version	—	—	—	—	1.0	6.0
File size	—	—	—	—	41K	16K
 **Backgrounder**						
Version	—	—	—	—	1.0	1.1
File size	—	—	—	—	3.5K	5K
 **PrintMonitor**						
Version	—	—	—	—	1.0	1.2
File size	—	—	—	—	20.5K	34K
 **LQ ImageWriter**						
Version	—	—	—	—	—	1.0
File size	—	—	—	—	—	46K
 **LQ AppleTalk ImageWriter**						
Version	—	—	—	—	—	1.0
File size	—	—	—	—	—	55K

* The file sizes specified in the column for April '88 were the latest information at the time this manual went to press. However, it is possible that some of the numbers have changed since then. You can use the Get Info command (from the Finder File menu) to verify the final size of any items in the System Folder.

System software for the Macintosh SE and Macintosh II

File name	Created Jan. '87	Created April '87	Created Sept. '87	Created Apr. '88*
 **System**				
Version	4.0	4.1	4.2	6.0
File size	208.5K	311.5K	312.5K	361K
 **Finder**				
Version	5.4	5.5	6.0	6.1
File size	78K	78.5K	97K	103K
 **ImageWriter**				
Version	2.5	2.6	No change	2.7
File size	36.5K	36K	No change	39K
 **Clipboard**				
Version	None	None	None	4.2
File size	0.5K	No change	No change	0K
 **Scrapbook**				
Version	2.1	No change	No change	2.3
File size	11.5K	No change	No change	1K
 **LaserWriter**				
Version	3.3	4.0	5.0	5.2
File size	39.5K	49.5K	58.5K	61K
 **Laser Prep**				
Version	3.3	4.0	5.0	5.2
File size	25K	No change	No change	26K
 **AppleTalk ImageWriter**				
Version	2.5	2.6	No change	2.7
File size	41.5K	41K	No change	44K
 **General (Control Panel)**				
Version	1.0	3.1	3.2	3.3
File size	9.5K	13K	13K	14K
 **Key Layout**				
Version	2.0	2.1	2.2	No change
File size	3K	3.5K	4K	No change

File name	Created Jan. '87	Created April '87	Created Sept. '87	Created Apr. '88*
 **Keyboard (Control Panel)**				
Version	1.0	3.1	3.2	3.3
File size	1.5K	1.5K	4.5K	4K
 **Mouse (Control Panel)**				
Version	1.0	3.1	3.2	3.3
File size	3.5K	3.5K	3.5K	3K
 **Monitors (Control Panel)**				
Version	—	1.0	No change	3.3
File size	—	16.5K	No change	16K
 **Sound (Control Panel)**				
Version	—	3.1	3.2	3.3
File size	—	3.5K	No change	4K
 **Startup Device (Control Panel)**				
Version	—	3.1	3.2	3.3
File size	—	2.5K	No change	2K
 **Easy Access**				
Version	—	1.0	No change	No change
File size	—	3.5K	No change	No change
 **Color (Control Panel)**				
Version	—	—	3.2	3.3
File size	—	—	2K	2K
 **DA Handler**				
Version	—	—	1.0	1.1
File size	—	—	5K	6K
 **MultiFinder**				
Version	—	—	1.0	6.0
File size	—	—	41K	16K
 **Backgrounder**				
Version	—	—	1.0	1.1
File size	—	—	3.5K	5K
 **PrintMonitor**				
Version	—	—	1.0	1.2
File size	—	—	20.5K	34K

File name	Created Jan. '87	Created April '87	Created Sept. '87	Created Apr. '88*
 **LQ ImageWriter**				
Version	—	—	—	1.0
File size	—	—	—	46K
 **LQ AppleTalk ImageWriter**				
Version	—	—	—	1.0
File size	—	—	—	55K
 **LaserWriter IIsc**				
Version	—	—	—	1.0
File size	—	—	—	74K

* The file sizes specified in the column for April '88 were the latest information at the time this manual went to press. However, it is possible that some of the numbers have changed since then. You can use the Get Info command (from the Finder File menu) to verify the final size of any items in the System Folder.

Troubleshooting

PROBLEMS WITH YOUR MACINTOSH CAN BE CAUSED BY SOMETHING AS MINOR as the fact that someone has unplugged your power cord—or as major as a damaged hard disk. The information in this appendix is designed to help you fix the minor problems. If you try all the suggested remedies and nothing works, it is best to take your computer to an authorized Apple dealer who is equipped to diagnose and correct such problems.

▲ Warning Any time you detect a serious problem with the operation of your computer, unplug the power cord. This is the easiest way to turn off the power in an emergency. ▲

What's in this appendix?

This appendix will help you solve problems that may arise as you work with your Macintosh. The information is presented according to obvious symptoms of trouble, followed by an explanation of the probable cause and suggestions for fixing the problem.

The symptoms are arranged in two groups:

- general problems with the Macintosh (for example, the screen is dark, the desktop doesn't appear, a disk won't eject, or the mouse or keyboard is not working properly)
- problems working with MultiFinder turned on (for example, an application won't open, or Background Printing won't work)

General problems with the Macintosh

The symptoms included in this group are often the result of loose connections, blocked air vents, or damaged disks.

- **The screen is dark.** First, verify that the computer is getting power. Make sure the computer is turned on and the power cord is firmly attached to the Macintosh and to the outlet you are using.
 - If the outlet is controlled by a wall switch, see that the switch is on.
 - If the outlet is controlled by a dimmer switch, use a different outlet.
 - If your computer is plugged into a power strip with an on/off switch, make sure the switch is on.
 - If you have a separate monitor, the screen is dark, and the indicator light is off, make sure the monitor is plugged into a power supply. Also make sure that the monitor's power switch is in the on position. (See the manual that came with the monitor.)

 Second, check the brightness and contrast controls for your screen or monitor. If someone has turned the controls way down, the screen will be dark. (If you don't know how to adjust these controls, see your owner's guide. If you have a separate monitor, see the manual that came with your monitor.)



Figure B-1
Question mark icon



Figure B-2
X icon



Figure B-3
Sad Macintosh icon



Figure B-4
Happy Macintosh icon

- **The desktop doesn't appear.** When you start the computer (or insert a disk), the computer presents one of several icons that give you information about itself or the disk you inserted. The different icons indicate different situations:
 - The question mark means the computer is switched on but cannot find a startup disk. Insert a startup disk.
 - An X usually means that the disk you inserted to start the computer isn't a startup disk. It can also mean that the disk is damaged. Switch off the computer and try restarting with a different disk.
 - The "sad Macintosh" appears when the computer can't go any further because of a problem with the system software. Sometimes this indicates a hardware problem. See your Apple dealer. (You may have to eject the disk manually and unplug the system.)
 - The "happy Macintosh" means everything's fine to this point.

 If you use the Installer in the Mini System Setup Folder to create a startup disk for a specific version of the Macintosh—for example, a Macintosh SE—you can't use the startup disk in a Macintosh Plus or a Macintosh II. If you try, you will get a message informing you that the startup disk won't work. (See the *Macintosh Utilities User's Guide* for details.)

- **Moving the mouse doesn't move the pointer.** You should be moving the mouse on a clean, smooth surface.

 Make sure the mouse is firmly connected. (Unplug the mouse and plug it back in.) If you have a Macintosh SE or Macintosh II, the mouse may be plugged into the keyboard. Make sure the keyboard itself is plugged in at both ends. It may help to unplug and firmly replug all the connections just to make sure they are good.

 If you are confident that the connection between the mouse and the computer is good, the mouse may not be working properly. Try cleaning it. (For instructions, see your Macintosh owner's guide.)

 Occasionally, the problem is not with the mouse but with the software. Try restarting your computer with a different startup disk. If the mouse works normally, the problem is with the earlier disk.

- **Typing on the keyboard produces nothing on the screen.** Make sure the keyboard is connected securely to your Macintosh.

 You might be in a situation that doesn't allow typing. (For example, while in a graphics application you might have to select the tool for entering text, or typing won't work.) Open the Key Caps desk accessory to see whether typing works there. If it does, there's nothing wrong with your keyboard. If you still see nothing on the screen when you type, contact your authorized Apple dealer.

- **A dialog box with a bomb appears.** This means there's a problem with the software, and you'll have to restart. Try clicking the Restart button in the dialog box (restarting the computer with the same startup disk). Occasionally, you'll have to switch off the power and restart. If the problem occurs again, abandon that disk and try a different copy of the software.

 Generally, when the bomb appears, any work you've done since the last time you saved a document will be lost. (Saving documents every 15 minutes or so diminishes the risk of losing important work.)

 The dialog box may also contain an error code (for example, ID = 33). These codes are technical and, unless you're an expert, won't mean much (although it's a good idea to make a note of the code in case you want to report it to a dealer).

- **An application in a folder won't open.** Some applications cannot operate unless they are on the same level of the hierarchical file system as the System Folder. Drag the application out of the folder it's in and put it in the directory window for your startup disk. (Or move it onto the desktop.) Then try again to open the application. If it still won't open, try using a backup copy. (If that works, make a new backup copy for safekeeping.)

- **You can't save anything on a disk.** There are several conditions that might cause this problem:

 - The disk has not been formatted. You'll get a message telling you that the disk is unreadable and asking whether you want to initialize it. (For instructions, see "Preparing 3.5-Inch Disks for Use" in Chapter 7.)

 - The disk is locked. Eject the disk and see whether the colored plastic tab is in the locked position (leaving a small "hole" in the corner of the disk case). Unlock it and reinsert the disk. (For instructions on locking and unlocking disks, see "Protecting the Contents of 3.5-Inch Disks" in Chapter 7.)

- The disk is full. There are two ways to find out how much space there is on the disk:

 1. On the Finder desktop, open the disk icon. Make sure the directory window is in a By Icon or By Small Icon view. Look at the right side of the window, just below the menu bar. You'll see a number, followed by the label *available* (for example, "404K available"). That figure is the amount of space left on the disk.

 2. Select the disk icon and choose Get Info from the File menu. In the information window that appears, you'll see how much space has been used on the disk. Subtract the amount *used* from the total capacity of the disk—800K, for example.

 You can remove items from the disk to free up more space, use the Erase Disk command to clear it completely, or try using another disk.

- The disk drive is not working. If you've tried the remedies suggested above and still have trouble saving anything, take the computer to your authorized Apple dealer for help.

- **You can't eject a disk.** For some reason your computer can't get the information it needs to eject the disk in the usual ways. Choose Shut Down from the Special menu. Then hold down the mouse button while you restart the computer. This should eject the disk. If this doesn't work, find the small hole to the right of the disk drive. Insert a straightened paperclip (or similar small object) and push gently. This ejects the disk if all else fails.

- **The hard disk icon doesn't appear on the Finder desktop.** There are several possible causes and remedies:

 - Your hard disk may not have been initialized. See Chapter 8, "Hard Disks," for instructions on using Apple HD SC Setup to initialize it.

 - If it's an external hard disk, you should switch it on and let it warm up before you switch on the computer. (Check the manufacturer's recommendation for how long to run the hard disk before switching on the computer.) Also, if you've had to restart the computer after a dialog box with a bomb appeared on your screen, the disk drive may have been left in an odd state. Try switching it off, then on again.

- If you have more than one SCSI hard disk, they may both have the same SCSI ID (determining device priority). Open the Apple HD SC Setup utility (in the Setup Folder on the *Macintosh System Tools* disk). When you see the Apple HD SC Setup dialog box, click the Drive button. You'll see the device priority number for each Apple SCSI drive found. If two SCSI drives have the same device priority number, you must change one of them. See the manual that came with the disk drive for instructions.

- The hard disk resource might be damaged. If you have an Apple SCSI hard disk, you can try to repair the damage. Choose Shut Down from the Special menu, insert the *Macintosh System Tools* disk, and restart your computer. Open the Apple HD SC Setup utility (in the Setup Folder on the *Macintosh System Tools* disk), and when you see the Apple HD SC Setup dialog box, click the Update button. When the process is complete, click Quit.

 If the resource was the problem, the hard disk icon should appear on the desktop. Choose Restart from the Special menu to make the hard disk your startup disk.

 If your hard disk is not an Apple SCSI hard disk, refer to the owner's guide for instructions on what to do when the hard disk resource is damaged.

- If the hard disk you're having trouble with is a startup disk, the problem might be a damaged System file. Use the Installer on the *Macintosh System Tools* disk to reinstall your system software. Instructions for doing this are in Chapter 9, "Startup Disks."

 If the problem is so severe that the Installer won't work, try using Font/DA Mover to copy your fonts and desk accessories to a new System file (so you won't lose them). Drag the replacement System file to the System Folder on the hard disk.

- There might have been a power failure while the hard disk was in use. If so, try using the Disk First Aid utility to recover. See the *Macintosh Utilities User's Guide* for instructions.

If none of these suggestions helps, contact your authorized Apple dealer.

- **Using Apple HD SC Setup, you see the message "Drive selection failed."** If you click the Drive button in the Apple HD SC Setup dialog box and see this message, there are several possible problems.
 - If the disk is not a SCSI disk, you cannot use Apple HD SC Setup, and you'll see the message. See the manual that came with your disk drive for instructions on initializing the disk.
 - If the disk is an external Apple SCSI disk, it may not have been connected properly or switched on. See your Macintosh owner's guide for important information about connecting SCSI devices. Make sure that terminators and cables are seated properly.
 - Occasionally this message will appear with a non-Apple SCSI disk drive. Check all connections and make sure the disk drive is switched on. Also, refer to the manufacturer's instructions.
- **On a Macintosh II, the fan seems noisier than usual.** If the computer is heating up the fan will work harder. Check the clearance around the air vents and remove anything blocking the flow of air to the ventilation system. Also check the ambient temperature and do what you can to cool the room you're working in. If it is not possible to lower the temperature, turn off the computer. (In an emergency, pull the plug on the power cord.)

 Another suggestion is to avoid using the expansion slot closest to the power supply in the main unit. The fan inside the power supply is temperature controlled, and an expansion card in the slot next to it will create some heat. If you have fewer than six expansion cards, you won't need to use this slot.
- **The computer shuts down without warning.** This could be caused by a general power failure (in which case your other electrical appliances will not work either). If you have a Macintosh Plus or Macintosh SE, press the power switch on the back to turn the power off. If you have a Macintosh II, it will have been switched off by the power failure.

 On a Macintosh II, it is also possible that the air vents may have been blocked or covered in some way, causing the system to overheat; or the room temperature may have been too high. Thermal protection circuitry may have shut down the computer to prevent damage to the hardware. Check the clearance around the air vents and remove anything blocking the flow of air to the ventilation system. Also check the ambient temperature. Give the computer time to cool down (at least half an hour), and try starting it again.

- **Miscellaneous software problems.** You can avoid many software problems by always keeping each of your startup disks current with the latest system software. See "Using the Installer" in Chapter 9. If you have the same problem with all disks, the computer most likely needs service. Take it to your authorized Apple dealer.

 Some applications might require their own customized system files to work properly. In this case, you want to restart the computer from a different startup disk (probably the application disk).

 Some applications use data files (such as help files) that must be kept together in one folder. If you drag that folder from a 400K disk to a hard disk or to an 800K disk that's initialized with 800K format, the application may not be able to find the data files. Try moving the data files to the same directory window as the application.

- **Unspecified symptoms and cures.** If none of the symptoms or cures described so far seems to fit, consider the three general ways in which your computer could be ailing:

 - The application you're using could have gone wrong just this once after it was copied from the disk into memory. Try it again.
 - The disk you're using has bad information on it. Try Disk First Aid (explained in the *Macintosh Utilities User's Guide*).
 - The computer is on the blink. Take it to your authorized Apple dealer.

 If you've checked the specific symptoms in this chapter and you still can't get any response from your computer, try turning it off briefly and then on again. If this works and you're able to complete what you tried before, it was just a glitch. (That's a technical term.) If you find yourself in the same dilemma after restarting the computer, the problem is with the disk (possibly your hard disk if it's the current startup disk). Try another disk (one without any valuable documents on it, so you don't risk losing them).

Problems with MultiFinder

These are the factors most likely to cause problems:

- You haven't installed everything you need. (Check again to make sure you've followed the instructions for installing the system software and Background LaserWriter.)
- You haven't turned on the features you want to use.
- You need more memory (RAM) for what you want to do.
- You don't have enough disk storage for Background Printing.

The suggestions here may help you resolve some problems. If all else fails, you can always operate your Macintosh with MultiFinder turned off (opening one application at a time in the single-Finder environment). Or you might want to consider adding memory and a hard disk to your system. (Your authorized Apple dealer can help.)

- **You can't open an application.** If free memory is fragmented, you may not be able to open an application—even though it has worked with MultiFinder in the past. To clear up fragmentation, quit all open applications and restart them. (For more details on memory and fragmentation, see "Some Technical Points About Memory" in Chapter 10.)

 In certain cases when the largest available block of memory is close to the amount you want, you'll get a message offering the option of opening the application with less memory than the preferred amount. If you want to try this, click OK in the message box; otherwise, click Cancel. While you are running the application in this situation, it's a good idea to save what you're working on frequently. If you notice that the application is not behaving normally, quit it.

- **The icon is missing from the menu bar.** A few applications have so many menu titles that there won't be room for the active application's icon at the right edge of the menu bar. If that happens, everything's still OK; you've merely run out of menu bar real estate.

- **Desk accessories won't work.** Some desk accessories won't work with MultiFinder turned on. For example, some spelling checkers may not work because they cannot connect with the document you want to check. When you want to use a desk accessory that doesn't work with MultiFinder on, turn MultiFinder off. (See "Turning MultiFinder Off" in Chapter 10.) Use the desk accessory to do what you want, then turn MultiFinder on again.

Another circumstance that can prevent you from opening a desk accessory is a shortage of free memory. If this is the case, your Macintosh will make an alert sound. To open the desk accessory, you'll need to close one of the open applications.

- **You can't open a disk or folder icon.** If your system has a hard disk, you can accumulate a lot of applications, folders, and documents. In other words, you have more items for the Finder to manage (keeping track of names, dates, copies, and locations). If the Finder gives you a message that it is out of memory, you should increase the application memory size for the Finder.

 Changing the memory size for the Finder is the same as changing it for any application—except that you can make the change while the Finder is active (not possible with any other application). Open the System Folder and select the Finder icon. Then choose the Get Info command from the File menu. Use the pointer to select the box labeled Application Memory Size, and type a new number. Finally, for the change to take effect, you must restart the computer.

- **Background Printing won't work.** There are several possible causes for this problem.

 - Are Background Printing and MultiFinder turned on? Background Printing must be turned on. Choose the Chooser desk accessory from the Apple menu. the label Background Printing and make sure the On button is selected. (For more detailed instructions, see "Making Sure Background Printing Is On" in Chapter 10.)

 It is also possible that MultiFinder hasn't been turned on. If so, the Background Printing On and Off buttons will appear dimmed. Use the Set Startup dialog box to turn MultiFinder on. (See "Turning MultiFinder On" in Chapter 10.)

 - Are the necessary printing resources installed? If you open the Chooser and can't find the Background Printing label and the On and Off buttons, you have not installed all the printing resources you need. See "To Install *Macintosh Printing Tools*" in Chapter 9.

 - Is AppleTalk active? Open the Chooser and make sure that AppleTalk is active. If it's not, click the Active button.

- Is your startup disk too full? Because Background Printing must be able to create a spooled file and store it temporarily on your startup disk, a shortage of space on the disk can cause a problem. If your startup disk is a hard disk, there should be plenty of space. However, if you are working on a system that has two 3.5-inch drives and no hard disk, PrintMonitor may not be able to find enough storage space for large spooled documents.

 When this problem occurs, you will get a message telling you that the document could not be printed because there's not enough free space (and identifying the disk involved). Before you can print the document, you'll have to turn Background Printing off. (Use the Chooser desk accessory.) Then choose the Print command again. You will be printing in the foreground, and you won't be able to use the computer for another task until printing is finished.

- Do you have a LaserWriter printer? Background Printing is available only for the LaserWriter family of printers.

- Have you reset the Alarm Clock? When you have elected to set a specific time and date for a document to print, PrintMonitor depends on the internal clock to tell it when to start. If you have reset the Alarm Clock or the Time or Date on the Control Panel, that can affect the schedule for a printing job.

 If you have reset the clock and a job has not printed as expected, open PrintMonitor and select the document in the Waiting list. Then use Set Print Time (from the PrintMonitor window) to reschedule printing according to the new clock setting.

- Is there a compatibility problem? Occasionally an application will be incompatible with Background Printing. Documents won't print or your system may hang up, and none of the suggested remedies works to fix the problem. When that happens, turn off Background Printing and print in the foreground.

 Sometimes an update to application software can make the application incompatible even though it has worked with Background Printing in the past. When this happens, you can print in the foreground (by turning Background Printing off), and you may want to contact the application manufacturer to report the problem.

- **General misbehavior with MultiFinder.** Most applications are compatible with MultiFinder, but now and then you may find an application that is not. If you notice erratic behavior in an application, it is best not to use it in the MultiFinder environment. (See "Turning MultiFinder Off" and "Temporarily Starting Without MultiFinder" in Chapter 10.) Contact the manufacturer and ask whether an updated version of the application is available.

Index

A

About the Finder 114–115, 221, 239–240
accented characters 165
active window 18–20, 61
 MultiFinder and 229
adding images to Scrapbook 152–153
Alarm Clock 125–126. *See also* Date; Time
Apple Extended Keyboard 156–157, 162–163
Apple HD SC Setup 196–201
Apple Keyboard 156–157, 160–161
Apple menu 114–115. *See also* desk accessories
 About the Finder 114–115, 221, 239–240
 MultiFinder and 226–227
AppleTalk
 Active/Inactive 131–132
 choosing devices on 133
 connecting/disconnecting 132
 devices and 130–131
 zones and 133
application icons, dimmed, MultiFinder and 229
applications 26–36, 94–104
 changing memory size of, in MultiFinder 241–243
 copying 84–86
 creating documents in 94, 95
 duplicating 83
 locking 88
 moving 84, 93
 moving through hierarchical file system within 43–46
 New command and 95
 opening 26–27, 94
 opening documents within 46, 98–100
 printing documents within 109
 quitting 224
 removing 112
 starting 26–27, 94
 starting with MultiFinder 226
 unlocking 89
arrow keys
 Apple Extended Keyboard 162
 Apple Keyboard 160
 Macintosh Plus keyboard 158

B

Background Printing, MultiFinder and 231–238
 turning on/off 232–233
background processing 231. *See also* MultiFinder
Backspace key, Macintosh Plus keyboard 159
brightness (of colors) 140
by Color command (View menu) 120
by Date command (View menu) 120
by Icon command (View menu) 119
by Kind command (View menu) 120
by Name command (View menu) 119
by Size command (View menu) 120
by Small Icon command (View menu) 119

C

Calculator 127
calendar. *See* Alarm Clock; Date; Time
capacities of 3.5-inch disks 172–173
Caps Lock key
 Apple Extended Keyboard 162
 Apple Keyboard 160
 Macintosh Plus keyboard 158
characters, optional 164–165
Chooser 105, 127–133
 using with devices on AppleTalk 130–133
 using with directly connected printer 128–129
choosing a printer. *See* Chooser
choosing commands from menus 11–13
Clean Up command (Special menu) 120–121
Clear command (Edit menu) 119
Clear key
 Apple Extended Keyboard 163
 Apple Keyboard 161
 Macintosh Plus keyboard 159
clicking 52, 53
 selecting icons by 8
Clipboard 34. *See also* Edit menu
clock 125–126. *See also* Date; Time
close box 14, 17, 23, 65
Close command (File menu) 116
CloseView 145
closing windows 22–23, 65
color and Desktop Pattern 135–137
Color Control Panel 139–141
Color menu 122
color monitor, selecting number of colors 143, 145
color of highlight, changing 139–141
color wheel dialog box 140
Command key
 Apple Extended Keyboard 162
 Apple Keyboard 160
 Macintosh Plus keyboard 158
 shortcuts with 169–170

command(s)
by Color 120
by Date 120
by Icon 119
by Kind 120
by Name 119
by Size 120
by Small Icon 119
choosing from menus 11–13
Clean Up 120–121
Clear 119
Close 116
Copy 118
Cut 118
Duplicate 83, 117
Eject 118, 180–182
Empty Trash 121
Erase Disk 121
Get Info 86–87, 117
New 95
New Folder 115
Open 116
Page Setup 106–107, 117
Paste 119
Print 116
Print Directory 118
Put Away 117
Restart 121
Save 101
Save As 101–103
Select All 119
Set Startup 121, 243–244
Show Clipboard 119
Shut Down 2, 121
Undo 118
connecting/disconnecting AppleTalk 132
Control key
Apple Extended Keyboard 163
Apple Keyboard 160
Control Panel 133–150
Color Control Panel 139–141
General Control Panel 134–139
Keyboard Control Panel 142
Monitors Control Panel 143–147
Mouse Control Panel 148–149
Sound Control Panel 149
Startup Device Control Panel 150
Convergence Test 144, 145, 146
Copy command (Edit menu) 73, 118
copying. *See also* duplicating
applications 84–86
disks 185–190
documents 84–86
folders 84–86
icons 83–86
3.5-inch disks 185–190
copying and pasting text 73
creating startup disks 208–214
customizing startup disks 216
Cut command (Edit menu) 118
cutting and pasting text 72–73

D

Date, setting 137. *See also* Alarm Clock
Delay Until Repeat, setting 142
Delete key
Apple Extended Keyboard 163
Apple Keyboard 161
deleting. *See* removing
desk accessories 115, 123–154. *See also* Apple menu
Alarm Clock 125–126
Calculator 127
Chooser 105, 127–133
Control Panel 133–150
Find File 124, 125
Key Caps 150–152
MultiFinder and 230–231
Note Pad 124
Puzzle 124
Scrapbook 152–154
startup disks and 216
desktop 4, 78–80. *See also* Finder
Desktop Pattern, setting 135–137
destination disk 84
diacritical marks 165
dialog boxes, directory 29, 35–36, 97–98
dimmed application icons, MultiFinder and 229
directories 90–91
printing 109–110
directory dialog box 29, 35–36, 97–98
directory views 90–91
directory window 14, 90–91
Setup Folder 21
System Folder 20–21
disks, hard 193–202
initializing SCSI 195–198
reinitializing SCSI 199–201
startup 203–218
disks, 3.5-inch 3, 171–191
copying 185–190
dragging to Trash 182–183
drives and 173
ejecting 180–184
initializing 173–179
locking 190
protecting the contents of 190
reinitializing 178–179
startup 203–218
document icon 30–31
documents 6, 94–104. *See also* applications
changing name of 47–49
copying 84–86
creating 28, 94
creating with New command in applications 95
duplicating 83
locking 88
moving 84, 93
moving images from Scrapbook to 153–154
naming 29–31
opening from Finder 96
opening within applications 46, 98–100
organizing 37–49
printing from applications 109
printing from Finder 108–109
removing 49, 112
renaming 80–82
saving 29–31, 35–36
saving in hierarchical file system 47–49
saving with different name 101–103
saving with same name 101
unlocking 89

double-clicking 20–21, 52, 54
Double-Click Speed, setting 149
dragging 9–10, 52, 57
 selecting grouped icons by 58–59
 3.5-inch disks to Trash 182–183
 windows 17
driver resource, SCSI hard disk 194, 199
drives, 3.5-inch disks and 173
Duplicate command (File menu) 83, 117
duplicating. *See also* copying
 applications 83
 documents 83
 folders 83
 Scrapbook files 154

E

Easy Access 166–169
editing text 32–34, 70–74
Edit menu 118–119
 Clear command 119
 Copy command 118
 Cut command 118
 Paste command 119
 Select All command 119
 Show Clipboard command 119
 Undo command 118
800K disks
 initializing 174–176
 reclaiming space on startup 217–218
 startup 207
Eject command (File menu) 118, 180–182
ejecting 3.5-inch disks 180–184
Empty Trash command (Special menu) 121
Enter key
 Apple Extended Keyboard 163
 Apple Keyboard 161
 Macintosh Plus keyboard 159
Erase Disk command (Special menu) 121
Esc key
 Apple Extended Keyboard 163
 Apple Keyboard 161

F

File menu 115–118
 Close command 116
 Duplicate command 83, 117
 Eject command 118, 180–182
 Get Info command 86–87, 117
 New Folder command 115
 Open command 116
 Page Setup command 106–107, 117
 Print command 116
 Print Directory command 118
 Put Away command 117
files, spooled 231
Finder 77–112. *See also* MultiFinder; *specific command; specific menu*
 desktop and 78–80
 opening documents from 96
 printing documents from 108–109
Finder memory graph, MultiFinder and 239–240
Find File 124, 125
folders 37–40, 89–93
 contents of 91
 copying 84–86
 creating 92
 duplicating 83
 moving 84, 93
 nesting 40–42
 removing 49, 112
Font/DA Mover, MultiFinder and 245
fonts and startup disks 173–178
formats of 3.5-inch disks 172–173
formatting disks. *See* initializing disks
400K disks, initializing 176–178
fragmented memory, MultiFinder and 240–241
function keys, Apple Extended Keyboard 163

G

General Control Panel 134–138
general problems, troubleshooting 259–265
Get Info command (File menu) 86–87, 117, 248–249
 MultiFinder and 242–243
gray scales 143, 145

H

hard disks 193–202
 initializing SCSI 195–198
 reinitializing SCSI 199–201
 startup 203–218
HD Backup, MultiFinder and 245
hierarchical file system (HFS) 42–46, 89–93, 97–103
 moving through, within applications 43–46
 saving documents in 47–49, 101–104
highlight color, changing 139–141
highlighted icon 8
history of system software 247–257
horizontal scroll bar. *See* scroll bars
hue (of colors) 140

I, J

I-beam pointer 28. *See also* insertion point
icons 4, 30–31, 80–89. *See also* applications; disks; documents; folders
 dragging 9–10
 opening 18–19, 20–21
 renaming 80–82
 selecting by clicking 8–9
 selecting grouped, by dragging 58–59
inactive windows 18–20, 60–61
 MultiFinder and 229
information window 86–87
initializing disks 173–179
 800K disks 174–176
 400K disks 174–176
 SCSI hard disks 194–201
inserting
 text 70
 3.5-inch disks 3
insertion point 28, 70
 moving 33, 34
Installer 209–214
installing
 Macintosh Printing Tools 212–214
 Macintosh System Tools 210–212
 printing resources 212–214
international language characters 165

K

keyboard 155–170
 shortcuts 169–170
Keyboard Control Panel 142
Key Caps 150–152
Key Repeat Rate, setting 142

L

LaserWriter Options dialog box 107
LaserWriter Page Setup dialog box 106
locking
 applications 88
 documents 88
 3.5-inch disks 190–191

M

Macintosh 512K, history of system software 250–251
Macintosh 512K enhanced, history of system software 251–252
Macintosh Plus
 history of system software 253–254
 on/off switch 2
Macintosh Plus keyboard 156–157, 158–159
Macintosh Printing Tools, installing 212–214
Macintosh SE
 history of system software 255–257
 on/off switch 2
Macintosh System Tools, installing 210–212
Macintosh II
 history of system software 255–257
 power off switch 2
memory, MultiFinder and 221–222, 238–243
menu bar 11
Menu Blinking, setting 137
menus 11. *See also specific menu*
 choosing commands from 11–13
 pulling down 12
 shortcuts 169–170
menu title 12
modifier keys (Easy Access) 166–167
Monitors Control Panel 143–147
monitor status
 setting for multiple monitors 144–147
 setting for single monitor 143–144
monochrome monitor, selecting number of grays 143, 145
mouse 52–59
 basics of 6–10
Mouse Control Panel 148–149
mouse keys (Easy Access) 168–169
Mouse Tracking, setting 148
moving
 applications 84, 93
 documents 84, 93
 folders 84, 93
 images from Scrapbook 153–154
 insertion point 33, 34
 pointer 7
 text 72–73
 through hierarchical file system within applications 43–46
 windows 17, 61
MultiFinder 219–245. *See also* Finder
 active window and 229
 Apple menu and 226–227
 Background Printing and 231–238
 desk accessories and 230–231
 dimmed application icons and 229
 Finder and 226
 Finder memory graph and 239–240
 Font/DA Mover and 245
 fragmented memory and 240–241
 HD Backup and 245
 inactive windows and 229
 memory and 221–222, 238–243
 quitting applications and 224
 RAM cache and 245
 sample session 225–231
 small icon in menu bar and 229–230
 starting applications with 226
 switching startup disks and 245
 system requirements 221
 tips 245
 troubleshooting 266–268
 turning on/off 223–224
 unfragmented memory and 241
 windows and 227–229

N

naming documents 29–31
nesting 91
 folders 40–42
New command 95
New Folder command (File menu) 115
Note Pad 124
numeric keypad, using mouse keys with (Easy Access) 168–169
numeric keys
 Apple Extended Keyboard 162
 Apple Keyboard 160
 Macintosh Plus keyboard 158

O

on/off switch (Macintosh Plus and Macintosh SE) 2
Open command (File menu) 116
opening
 applications 26–27, 94
 documents from Finder 96
 documents within applications 46, 98–100
 icons 18–19, 20–21
optional characters 164–165
Option key 164–165
 Apple Extended Keyboard 162
 Apple Keyboard 160
 Macintosh Plus keyboard 158
 shortcuts with 170
organizing documents 37–49
overlapping windows 18–19

P

Page Setup command (File menu) 106–107, 117
partitions 200
Paste command (Edit menu) 119
pasting text 34, 72–73
pattern (desktop). *See* Desktop Pattern
pointer, moving 7
ports, printer 129
power off switch, Macintosh II 2

Power On key
Apple Extended Keyboard 163
Apple Keyboard 161
Preferences dialog box 236–237
preparing disks. *See* initializing disks
pressing 52, 56
Print command (File menu) 116
Print Directory command (File menu) 109–110, 118
printer ports 129
printers, choosing. *See* Chooser
printing 105–110
background 231–238
directories 109–110
documents from Finder 108
documents within applications 109
groups of documents from Finder 108–109
printing resources, installing 212–214
PrintMonitor 233–238
problems, troubleshooting 258–268
protecting the contents of 3.5-inch disks 190
pulling down menus 12, 56
Put Away command (File menu) 117
Puzzle 124

Q

quitting applications, MultiFinder and 224

R

RAM cache
MultiFinder and 245
setting 138
Rate of Insertion Point Blinking, setting 137
Read Me documents 74–75
recovering items from Trash 112
reinitializing
SCSI hard disks 199–201
3.5-inch disks 178–179
removing
applications 112
documents 49, 112
folders 49, 112
images from Scrapbook 153
text 74
renaming icons 80–82
replacing text 74
resizing windows 62
resource files 127
Restart command (Special menu) 121
Return key
Apple Extended Keyboard 163
Apple Keyboard 161
Macintosh Plus keyboard 159

S

sample session (MultiFinder) 225–231
saturation (of colors) 140
Save As command (File menu) 101–103
Save As dialog box 35
Save command (File menu) 101
saving documents 29–31, 35–36, 47–49
with different name 101–103
with same name 101
scanning order for startup disks 215
Scrapbook 152–154
adding images to 152–153
file, duplicating 154
moving images to document from 153–154
removing images from 153
scroll arrows 24, 67
scroll bars 14, 24–25, 66, 69
scroll box 25, 68, 69
scrolling windows 66–69
by the windowful 68
line by line 67
SCSI hard disk 193–201
initializing 195–198
reinitializing 199–201
Select All command (Edit menu) 119
selecting 52
grouped icons by dragging 58–59
icons by clicking 8–9, 52–53
text 33, 71
Set Startup command (Special menu) 121
MultiFinder and 223–224, 243–244
Set Startup dialog box 223–224, 244
setting
Date 137
Delay Until Repeat 142
Desktop Pattern 135–137
Double-Click Speed 149
Key Repeat Rate 142
Menu Blinking 137
monitor status 143–147
Mouse Tracking 148
RAM cache 138
Rate of Insertion Point Blinking 137
Speaker Volume 139
startup applications 121, 243–244
Time 137
setting up a SCSI hard disk 194–201
Setup Folder, directory window 21
Shift-clicking 52, 55
Shift key
Apple Extended Keyboard 162
Apple Keyboard 160
Macintosh Plus keyboard 158
shortcuts 169–170
Show Clipboard command (Edit menu) 119
Shut Down command (Special menu) 2, 121
size box 14, 15, 62
small icon in menu bar, MultiFinder and 229–230
small System files 207, 218
software. *See* applications; system software
Sound Control Panel 149
source disk 84
Speaker Volume, setting 139, 149
special keys, Apple Extended Keyboard 163

Special menu 120–121
Clean Up command 120–121
Empty Trash command 121
Erase Disk command 121
Restart command 121
Set Startup command 121, 243–244
Shut Down command 2, 121
spooled files 231
starting
applications 26–27, 94
applications with MultiFinder 226
Macintosh 203–218
tutorial 3–4
Startup Device Control Panel 150
startup disks 203–218
creating 208–214
customizing 216
desk accessories and 216
fonts and 216
hard vs. 800K 207
Installer and 209–212
making nonstartup disk 217
MultiFinder and 245
reclaiming space on 217–218
scanning order for 215
small System files and 207, 218
switching 215–216, 245
updating 208–214
sticky keys (Easy Access) 166–167
switching startup disks 215–216
MultiFinder and 245
System files, small 207, 218
System Folder 205–206
directory window 21
multiple copies of 206
system requirements (MultiFinder) 221
system software, history of 247–257

T

Tab key
Apple Extended Keyboard 163
Apple Keyboard 161
Macintosh Plus keyboard 159
TeachText 27, 74–75
text
copying and pasting 73
cutting and pasting 72–73
editing 32–34, 70–74
inserting 70
moving 72–73
pasting 34
removing 74
replacing 74
selecting 33, 71
text box 29
3.5-inch disks 171–191
capacities of 172–173
copying 185–190
dragging to Trash 182–183
ejecting 180–184
formats of 172–173
initializing 173–178
inserting 3
locking 190
protecting the contents of 190
Time, setting 137. *See also* Alarm Clock
title bar 14, 17
Total Memory, MultiFinder and 221–222
Trash 111–112
dragging 3.5-inch disks to 182–183
recovering items from 112
troubleshooting 258–268
tutorial 1–50
starting 3–4

U

Undo command (Edit menu) 118
unfragmented memory, MultiFinder and 241
unlocking
applications 89
documents 89
3.5-inch disks 191
updating startup disks 208–214
utility programs 21

V

version number, identifying 248–249
vertical scroll bar. *See* scroll bars
View menu 119–120
by Color command 120
by Date command 120
by Icon command 119
by Kind command 120
by Name command 119
by Size command 120
by Small Icon command 119
volume (speaker) 139, 149

W, X, Y

windows 13, 14–25, 60–69
active 18–20, 61, 229
changing size of 15
closing 22–23, 65
directory 90–91
inactive 18–20, 60–61, 229
moving 17, 61
MultiFinder and 227–229
overlapping 18–19
resizing 62
scrolling 66–69
zooming 16, 63–64
word wrap 28
wristwatch pointer 28

Z

zones (network) 127, 133
zoom box 14, 16, 63–64
zooming windows 16, 63–64